NEW EQUIPMENT DIGEST

A Penton Publication

May, 1958

Volume 23—Number 5

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CHECK AND PASS ALONG

✓	NAME	See No.

Use Inquiry Slips—Pages 4 and 100

EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

FELT TIP PEN
cap also serves as bench receptacle

The 7½-in. long Flo-master felt-tip pen for industrial marking has been improved with a dual-purpose cap which can be screwed to factory bench as a permanent receptacle. The all-aluminum pen makes permanent marks up to 1 in. wide in any color. With transparent or opaque Flo-master inks it will mark on anything from metal to fabrics and will also handle industrial solvents. Cap is air-tight to preserve tip moisture. Made by **Cushman & Denison Mfg. Co.**, Carlstadt, N. J.

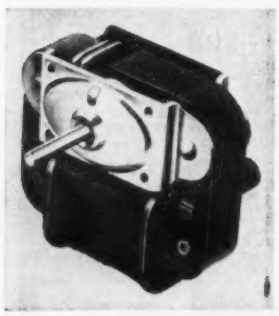
▲ For more details circle **NED-1 E8** on enclosed inquiry slip ▲

POWERED FLOOR SWEEPER
gasoline powered, self-propelled

Dust-free sweeping is achieved with the Turbo Sweep 40 self-propelled, gasoline-powered, floor sweeper because unit actually gathers dust from the air. It picks up dirt, trash, paper, and scrap. Both dust bag and trash hopper are quickly emptied. Highly maneuverable, even with riding sulky, sweeper turns in a radius of 4½ ft. Brush assembly is adjustable. Made by **Parker Sweeper Co.**, Dept. ND-1, Box 720, Springfield, Ohio.

▲ For more details circle **NED-2 E8** on enclosed inquiry slip ▲

ALTERNATING CURRENT MOTOR
rated up to 1/150 hp



Features of this subfractional alternating-current motor include alignable bearings, large oil reservoirs with auxiliary oil cups, high starting torque, and low noise level. Stack thicknesses of 9/16 and 15/16 in., and shaft diameters of ⅛ and 5/32 in. are available. Type B unit is rated to 1/150 hp at 2400 rpm, with starting torques to 0.21 lb-in. Typical applications include driving 2½ to 8-in. fans for slide projectors, desk fans, heaters, deodorizers, electronic equipment, refrigerator blowers, and gear trains. Made by **Barber-Colman Co.**, Dept. NED, 1300 Rock St., Rockford, Ill.

▲ For more details circle **NED-3 E8** on enclosed inquiry slip ▲

Books for the Metal Industry

American Society for Metals—32-page catalog entitled "Books for the Metal Industry" reviews hundreds of technical and reference books dealing with practically every phase of metallurgy and metalworking. Brief descriptions, prices, authors, and other information are given on each volume.

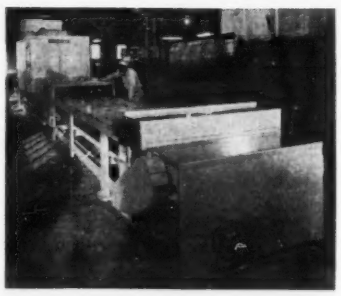
▲ For more details circle **NED-4 E8** on enclosed inquiry slip ▲

POWER LIFT TRUCK
for use in explosion-hazard areas

Explosionproof features built into the 54.00 Series Go-Getter power lift trucks suit them for Class I, Group D and Class II, Group G dust or fume-laden areas. Line includes 4000 and 6000-lb capacity, 4-in. lift platform models; 4000 and 6000-lb capacity, 4-in. lift pallet models; 3000 and 4000-lb capacity, 115-in. lift platform types; 2500, 3000, and 4000-lb capacity, 156-in. lift straddle type trucks; and 1000, 1500, 2000, 2500, and 3000-lb capacity, 115-in. lift fork trucks of the counter-balanced tilt type. Series also includes a 700-lb drawbar pull tractor and pedestrian-operated models. Made by **Revolvator Co.**, 2032 86th St., North Bergen, N. J.

▲ For more details circle **NED-5 E8** on enclosed inquiry slip ▲

DIELECTRIC HEATERS
line now has units up to 200 kw



Extended line of electronic dielectric heaters now includes units rated 3 to 200 kw. Units speed production and minimize cost of heating, drying, baking, and curing of nonconductive materials. Uses include setting of glued joints, jelling, curing and vulcanizing rubber, and heating plastic preforms. Illustrated are oscillator sections for two of five 200-kw heaters to be used with ovens in the drying of synthetic textile fibers. When completed, the assembly will be 69 ft long. Made by **Allis-Chalmers Mfg. Co.**, 918 S. 70th St., Milwaukee 1, Wis.

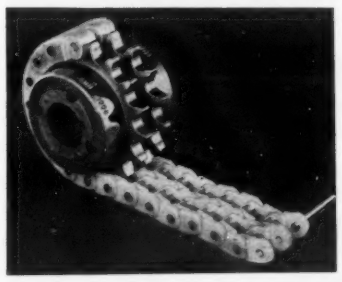
▲ For more details circle **NED-6 E8** on enclosed inquiry slip ▲

PNEUMATIC NAMEPLATE STAMPER
stamps 50-60 characters per minute

Both hands are required to cycle the new GTS pneumatic nameplate stamper, thus safeguarding operator's fingers. Unit operates on 110-v 60-cycle ac and minimum of 40-psi shop air. Stamping pressure, derived from air line, can be regulated. Unit will mark plates of varying hardness, from soft brass to stainless steel, and measuring up to 6 x 8 in. Plates can be from 0.012 to 0.062 in. thick. With special gage and table, plates up to ½ in. thick can be accommodated. Unit has 6-in. throat and a 9¾ x 11-in. table. Made by **Geo. T. Schmidt, Inc.**, 1800 Belle Plaine Ave., Chicago 13, Ill.

▲ For more details circle **NED-7 E8** on enclosed inquiry slip ▲

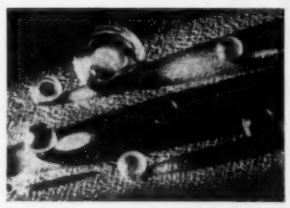
FLEXIBLE NYLON COUPLING
handles up to 40-hp loads



Chain element of this quiet-operating flexible coupling is made of nylon segments and stainless steel pins. It can be disassembled or connected at any link without special tools and fits standard roller chain sprockets. Coupling handles loads from fractional to 40 hp at speeds from 500 to 5000 rpm. Complete couplings with ½-in. pitch links and soft steel sprockets, or chain elements cost about 20 per cent less than their all-steel counterparts. Made by **Morse Chain Co.**, Dept. 7, Ithaca, N. Y.

▲ For more details circle **NED-8 E8** on enclosed inquiry slip ▲

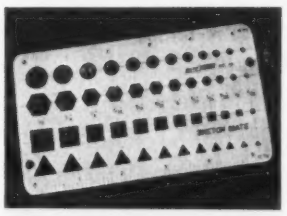
PRECISION BALLS
for elevated temperature use



Metal balls having tolerances within 0.000010 in. are available for use at elevated temperatures. High temperature alloys offered include T-1, T-2, T-5, M-2, M-10, M-50, Cobenium, modified 440, Stellite, and Inconel. Pyrex glass balls are also made, and other materials can be specified. Made by **Hartford Steel Ball Co.**, 9 Jefferson Ave., West Hartford 6, Conn.

▲ For more details circle **NED-9 E8** on enclosed inquiry slip ▲

DRAFTING TEMPLATE
facilitates sketching and layout



Made of 0.030-in. mathematical quality plastic, the No. 19 Sketch Mate template provides a family of circles, hexagons, squares, and triangles. Cut-out sizes range from 3/32 to ½ in., with increments of 32nds to ⅜ in. and 16ths thereafter. Template also has two 5-in. scales, one graduated in 10ths, the other in 16ths. Price is $1.50. Made by **Rapidesign, Inc.**, Box 429A, Burbank, Calif.

▲ For more details circle **NED-10 E8** on enclosed inquiry slip ▲

BEAM-LIFTING TONGS
in 3000 and 6000-lb capacities

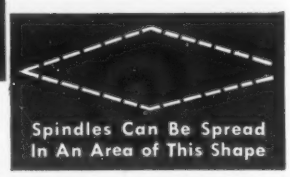
Rounded ends of these beam-lifting tongs allow the jaws to slide over the beam flange. When tongs are lifted, jaws close on beam. The 3000-lb capacity tongs have maximum opening of 10 in. and minimum opening of 5½ in. Maximum and minimum openings of the 6000-lb capacity tongs are 13¾ and 8¼ in., respectively. Made by **Heppenstall Co.**, Materials Handling Div., Box 277, New Brighton, Pa.

▲ For more details circle **NED-11 E8** on enclosed inquiry slip ▲

FOR STRAIGHT-LINE DRILLING, REAMING, TAPPING,

Use Zagar's IN-LINE HEAD

Designed specifically for long, narrow hole patterns!



All Zagar advantages are included in the IN-LINE head. Any number of holes, in any pattern, on all centers within the area, can be drilled, tapped or reamed simultaneously in any material. Spindle diameters ¼" through 1". IN-LINE heads can be mounted on any standard drill press. You'll get full engineering data when you—

Write for Bulletin N-905

ZAGAR, INC. • 23880 Lakeland Blvd., Cleveland 23, Ohio

Zagar TOOLS FOR INDUSTRY and SPECIAL MACHINERY

For more details circle NED-12 E8 on enclosed inquiry slip

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Pryor Hand Marking Kit

PRYOR interchangeable STEEL TYPE

★ Rockwell tested tempered tool steel.

★ Anodic etched and nickel plated for rust prevention.

★ Hand finished for precision alignment.

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PRYOR MARKING PRODUCTS

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For more details circle NED-13 E8 on enclosed inquiry slip

BURNITOL DISPOSABLE UTILITY BOXES

SO MANY USES . . . SO ECONOMICAL!

Eliminate the cleaning and maintenance of small containers! Burnitol Utility Boxes are of one piece waxed paper board construction shipped ready for use. So economical they are readily expendable.

There's no limit to the uses of this sturdy container . . . from handling nuts and bolts to fine powders (siftproof). Ideal for small parts assembly or storage, Burnitol will hold wet or dry materials, and will hold water more than 24 hours. Uniform size: 6½" x 6½" x 3". Already in use in the country's largest industrial plants.

Write today for free samples and prices.

BURNITOL MANUFACTURING CO.

P. O. Box #118, Chicopee 3, Mass.

For more details circle NED-14 E8 on enclosed inquiry slip

The Way Ahead

Everyone in business is concerned with the present pause in the growth of our economy. What to do about it is uppermost in our minds. Some sound advice and guidance is offered in the bulletin, "Resisting Business Contraction*."

Following a sound discussion of the possible steps that can be taken by businessmen today, this booklet points out:

"Business firms which follow far-sighted and aggressive policies in time of contraction will find themselves favorably situated when expansionist forces take hold again. Several policy recommendations are made.

"(1) ALERT PLANT AND EQUIPMENT POLICY. With growth in job-making investment and in deepening our capital structure, it is possible to provide more jobs and, particularly, to provide better and more productive jobs.

"(2) BETTER SALES EFFORT. With the development and effective promotion of new or better products at good values, economic recovery and progress can make their full contribution.

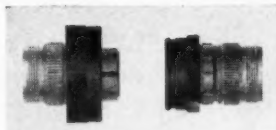
"(3) EFFECTIVE COST CONTROL. With well-planned programs to hold down costs, margins will be safeguarded and business confidence will be soundly enhanced. New business is badly needed in recapturing control of labor costs.

"Thus, while government must create the climate for recovery and the stability to encourage long-range business planning, the individual businessman . . . has open to him a number of choices which . . . can add to the recovery and growth of the economy."

A. N. Gregg
EDITOR

*Copies of this informative booklet can be obtained for 50 cents each from the Economic Research Dept., Chamber of Commerce of the United States, Washington 6, D. C.

ELECTRICAL CONNECTOR for hard-to-get-at area uses



Connected by indexing the pins and pushing the two sections together, this electrical connector adapts to AN 3100, 3101, and 3102 receptacles and AN 3106 and 3108 plug-in Types A, C, and E. A click indicates that the unit is connected. Disconnection is by pulling on the actuating ring. Use is feasible in restricted areas where turning or twisting of an actuating ring is impossible. Made by E. B. Wiggins Oil Tool Co., Dept. NED, 3424 E. Olympic Blvd., Los Angeles 23, Calif.

For more details circle NED-15 E8 on enclosed inquiry slip

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OPTICS FOR INDUSTRY!

Optics for the space era . . . Satellite Scopes, Astronomical Telescopes, etc.

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Write for this amazing Catalog! You won't be sorry! 80 pages — hundreds of illustrations, charts, diagrams. A treasure-house of optical information . . . bargains galore. Optics for industry! Scopes for observing Satellites, Moon, Planets, Rockets. Optics for research labs, experimenters, hobbyists! Instruments for checking, measuring — to speed your work, improve your quality, cut your costs. We give you FACTS, no fluff. Tell you what it is — how it works — where it's used!

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Countless war surplus bargains — ingenious optical tools from foreign lands. Thousands of optical components: Infrared telescopes, microscopes, magnifiers, lenses, prisms, wedges, mirrors, mounts — accessories of all descriptions. We are reliable. You deal with us by mail. No salesman will call. Shop the Catalog of America's greatest optical mart. Mail coupon. No obligation.

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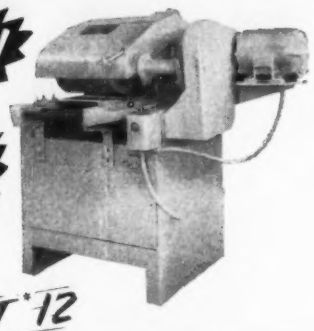
For more details circle NED-16 E8 on enclosed inquiry slip

Versatile! Low Cost!



the NEW TIMESAVER SPEEDBELT 12

. . . speeds finishing, polishing and deburring operations

Now, for the first time finishing, polishing and deburring of small metal parts, stampings and forms can be put on a production line basis. The new Timesaver *Speedbelt* "12" equipped with conveyor belt or roller feed tables can be set in the production line to accelerate production and cut unit costs. Deburring jobs on small metal stampings that previously took up to 20 man-hours can now be done in 2 or 3.

The Speedbelt "12" is an abrasive belt machine of the same rugged construction as its larger and well known counterparts; the Timesaver "Speedbelt" Models SPL and TOP. Compact in size, with a 34" feeding height, it can be adjusted for fine metal removal on stock up to 2" thick. Abrasive belts can be changed in one minute or less and feed speed is variable from 20 to 50 SFM.

Investigate the advantages of the Speedbelt "12" for your shop. Write today for folder and prices.

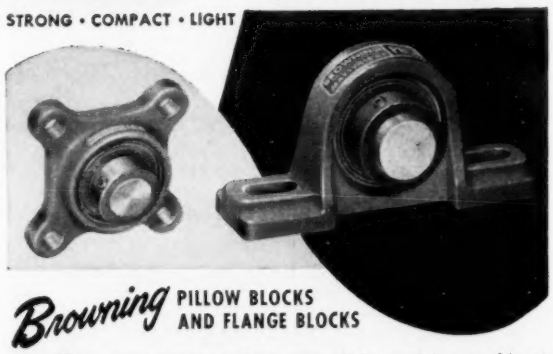
TIMESAVER SANDERS

P.O. Box 7446 • Robbinsdale Station
MINNEAPOLIS 22, MINNESOTA

For more details circle NED-17 E8 on enclosed inquiry slip

NOW . . . BEARING UNITS OF *Malleable*

STRONG • COMPACT • LIGHT



Browning PILLOW BLOCKS AND FLANGE BLOCKS

More compact design and consequent lighter weight are achieved in Browning's new pillow blocks and flange blocks by the use of *malleable* housings that are stronger, virtually indestructible. Contain self-aligning ball bearing units, permanently lubricated and sealed; wide inner ring, eccentric locking ring, safety set screw. Your Browning distributor stocks *two heights*, 28 sizes for ½ to 2⅞" shaft, all with elongated bolt slots. Ask for new descriptive Catalog BU-101.

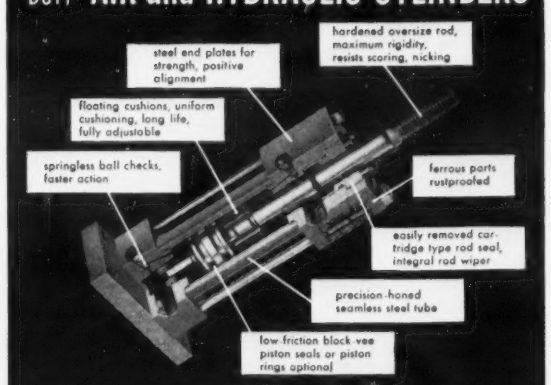
Browning Manufacturing Company, Maysville, Kentucky.

Browning POWER TRANSMISSION EQUIPMENT

For more details circle NED-18 E8 on enclosed inquiry slip

for performance . . . dependability . . . economy . . . specify SP

HEAVY DUTY AIR and HYDRAULIC CYLINDERS



Rated 200 psi air or 1,000 psi hydraulic—interchangeable air or hydraulic without modification—built to JIC standards—specified by automotive manufacturers—conforms to Ford and Chrysler standards.

Representatives in principal cities. Phone or write for Catalog No. 115.

SP *for speed and performance* THE S-P MANUFACTURING CORPORATION SOLON, OHIO

NON-ROTATING AIR AND HYDRAULIC CYLINDERS • ROTATING AIR AND HYDRAULIC CYLINDERS • POWER CHUCKS • COLLET AND DRILL PRESS CHUCKS • VALVES, ACCESSORIES

A BASSETT COMPANY • IN GREATER CLEVELAND • ESTABLISHED 1916

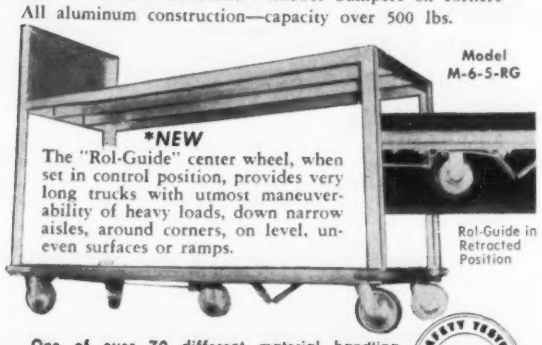
AA-7485

For more details circle NED-19 E8 on enclosed inquiry slip

ROL-AWAY'S New GOODS MARKING TRUCKS

with Revolutionary ROL-GUIDE for Fastest Stockroom Operation

These trucks in two styles and four sizes are specially designed for handling and marking packaged goods in stores and warehouses. Two large flush shelves, four swivel casters plus one center Rol-Guide.* Rubber bumpers on corners—All aluminum construction—capacity over 500 lbs.



One of over 70 different material handling trucks for every purpose—send for literature.

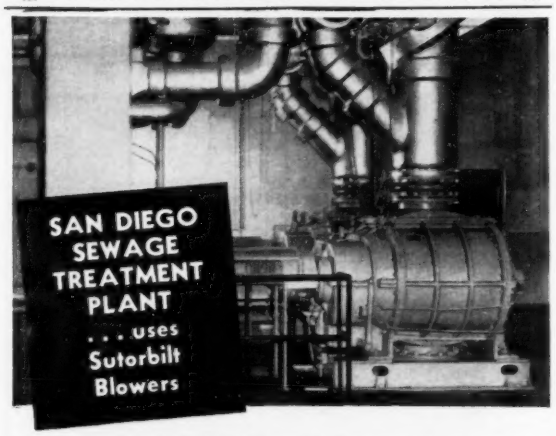
SAFETY TESTED QUALITY EQUIPMENT PROMOTES SAFETY

The ROL-AWAY

ROL-AWAY TRUCK Mfg. Co. Inc.

6143 S.E. Foster Road Portland 6, Oregon

For more details circle NED-20 E8 on enclosed inquiry slip



Here is a typical SEWAGE TREATMENT plant installation. Blowers are heavy duty with a complete forced feed lubrication system.

This plant uses two size 22 x 36 blowers—7500 cfm, 6.5 psig, direct connected to sewage gas engines. The thrust bearing was especially designed to combat engine thrust, and expansion joints are designed to assure that weight of piping or misalignment will not set up a strain on the blower case.

Write for the name of the representative nearest you, or check the yellow pages of your local telephone directory.

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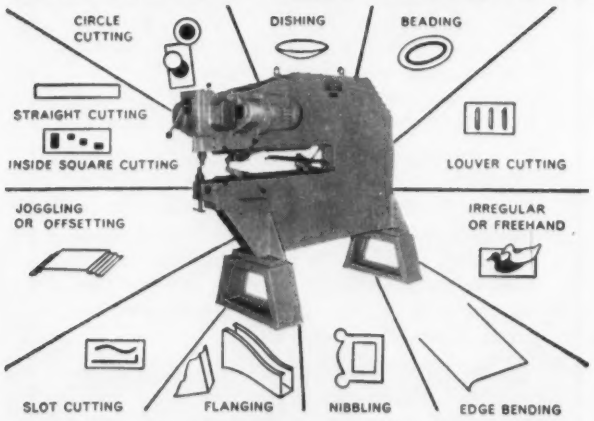
2966 E. Victoria St. • Compton, Calif.

For more details circle NED-21 E8 on enclosed inquiry slip

A Complete Sheet Metal Shop in One Machine

PULLMAX

DOES ALL OF THESE OPERATIONS



★ CUTS MILD STEEL UP TO 11/32"

The one machine that's sure to save time, labor and material when you work sheet or plate. Eliminates expensive die costs—easy to operate. 7 sizes to choose from.

Write for a demonstration right in your plant.

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AMERICAN PULLMAX CO., INC.

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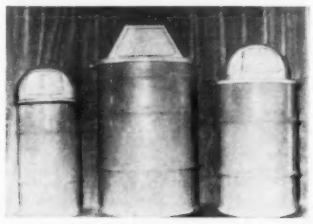
For more details circle NED-22 E8 on enclosed inquiry slip

DRY LUBRICANT KIT for free "try-it-yourself" use

Containing EverLube dry lubricant, applicator, metal part, and instructions, this kit lets the engineer try dry lubrication. Lubricant is used where extreme temperatures or pressures are a factor. After curing, it is insoluble in hydrocarbons. It can be used on pistons, threads, gears, slides, shafts, self-aligning bearings, springs, cams, and clevises. Kit is offered free of charge by **EverLube Corp.**, Hart & Farmdale Avenue, North Hollywood, Calif.

For more details circle NED-23 E8 on enclosed inquiry slip

ROUND-TOP DRUM LIDS convert drums to waste containers



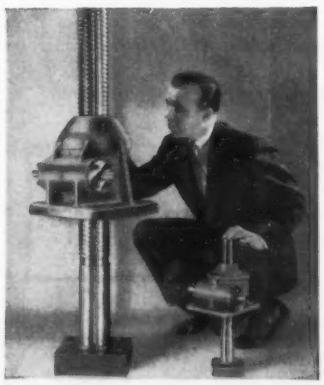
Round-top lids for converting 15 and 30-gal drums into practical waste containers are now available along with the original swing-top lids for 55-gal drums. All lids have two independently-operating contour doors which can be used simultaneously. Lids are made of heavy gage welded steel and have a rust-resistant finish. The 30-gal No. 2030 has thumb screws in the flange for snug fitting. The 15-gal Model 1415 has beading around bottom edge for easy, rigid fit. Made by **United Metal Cabinet Corp.**, Pottsville, Pa.

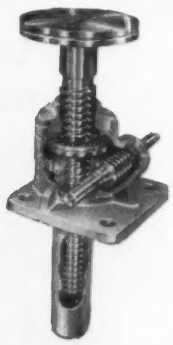
For more details circle NED-24 E8 on enclosed inquiry slip

STUD-DRIVING GUN drives up to 5/16-in. studs

By using three quickly interchangeable barrels, the Ammo Studgun can drive all sizes of pins and studs with up to 5/16-in. diameter. Operator of the powder - actuated tool can select the most economical cartridge - pin combination for the job at hand. A safety guard prevents firing unless the tool is in position and pressed firmly against the work surface. The guard also traps dust and particles and helps in keeping noise level low. Another safety device prevents accidental firing. Made by **Ammo Products, Inc.**, Dept. N, 1100 20th St. N.W., Washington, D. C.

For more details circle NED-25 E8 on enclosed inquiry slip





Here is a device which every machinery designer should know about

Functioning as parts of machinery and equipment, Duff-Norton Worm Gear Jacks can be used to position loads weighing hundreds of tons accurately and hold them indefinitely without creep. Thousands are in use in presses, conveyors, steel mill equipment, etc.

Available in capacities from 2 to 100 tons, Duff-Norton Worm Gear Jacks can be connected by means of shafting and mitre gear boxes to handle large loads—all jacks will raise in perfect unison. Standard raises go up to 24 inches—greater raises can be furnished upon request.

Write for Bulletin AD-66-N, which gives full details and includes a questionnaire for aid in selecting proper jacks. **Duff-Norton Company, P. O. Box 1889, Pittsburgh 30, Pa.**

For more details circle NED-26 E8 on enclosed inquiry slip

MOVE MATERIALS

THRU BINS HOPPERS CHUTES

Navco Air Vibrators have a patented one-piece design for trouble-free operation. No need to stock spare parts—no assembly bolts, housing springs, separate striking plates, or grooved pistons in Navco Vibrators. Complete line for bins, hoppers, chutes, R. R. Cars, concrete forms, and batching. Now being specified by the country's leading automotive production foundries.

***FREE!** 26-page Catalog*

Detailed information on models and applications

Write Dept. D-5

*PATENTED

NAVCO® **NATIONAL AIR VIBRATOR CO.**

2374 W. 7th St. • Cleveland 13, Ohio

For more details circle NED-27 E8 on enclosed inquiry slip

These Free-Use CRANE MOTION PICTURES can Help You CUT PIPING COSTS

Better understanding by plant personnel of valve design, proper application and good piping practice often leads to substantial reductions in piping costs.

These 16 mm. sound films from Crane's library cover their subjects accurately, clearly, comprehensively. Some are purely educational; others are high-interest demonstrations of special feature valves and their uses. There is no charge for use of these films.

HOW TO GET THESE FILMS

Choose any or all the subjects listed. In coupon below, circle numbers wanted. Write in preferred and alternate showing dates. Write in number of "take-home" booklets wanted with each film.

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2 **"CHOOSING THE RIGHT VALVE"—Two plant operating men with different ideas on valves come to agreement via demonstration of basic types, their variations and uses. (32 minutes)**

3 **"THE PACKLESS DIAPHRAGM VALVE"—Actual case studies showing many places where these valves can be used to advantage. (15 minutes)**

4 **"CORROSION-RESISTANT ALLOY VALVES"—Complete showing of new line of high alloy gate, globe and angle valves. (13 minutes)**

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836 S. Michigan Ave., Chicago 5, Ill.

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FILM No. (circle your choice)	Preferred Showing Date	Alternate Date	No. of "Take-Home" Booklets Wanted
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SHIP FILM TO: Company _____ Attention of _____ Address _____

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...with ACROFLEX, the pliable notched steel strapping

You'll find ACROFLEX as handy to have around your plant as nails and wire. ACROFLEX comes in 10 ft. lengths and can be bent by hand to conform to practically any shape needed. Illustrated above are only a few of the many possible uses of ACROFLEX.

Get more facts FREE

Complete information on ACROFLEX is contained in this folder. Write for your copy today. Ask for bulletin A-857.

ACRO METAL STAMPING COMPANY
340 E. Reservoir Ave., Milwaukee, Wis.

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PIPE REPAIR PERMANENCE

The Skinner-Seal Emergency Pipe Clamp is an instant, permanent repair under any operating condition. No pressure too high. Anyone can apply in a few moments. Made in all sizes, ½" to 12", for steel and C. I. pipe. Carried in stock by 1300 industrial distributors!

M. B. SKINNER CO., South Bend 21, Ind. — Established 1898

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Best way to heat a tank?

Call your Chromalox Man for the ANSWER

Each of the heaters shown above has significant advantages for various applications. Clockwise, from the left foreground:

- Chromalox Strip Heater clamps on, to heat tanks, pipes, and kettles by contact.
- Screw Plug Immersion Heater has standard pipe threads and heavy-duty elements of steel, copper, stainless steel or alloy for heating water, oils and corrosive solutions.
- Portable Tank Immersion Heater requires no tank opening, puts heat at the bottom of the tank.
- Coiled "Over-the-Side" Heater for tanks up to 4 feet deep.
- High Capacity Flange-Type Heater packs many kilowatts into small space.

Call your Chromalox Representative for the fast, clean, safe, Electrical answer to *all* your heating problems. 2608

CHROMALOX Electric Heat
Edwin L. Wiegand Company
7509 Thomas Blvd., Pittsburgh 8, Pa.
See ad on Pg. 67

▲ For more details circle **NED-31 E8** on enclosed inquiry slip ▲

NEW EQUIPMENT DIGEST

A PENTON PUBLICATION • PENTON BUILDING, CLEVELAND 13, OHIO

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New Equipment Digest is published monthly by The Penton Publishing Co., Penton Building, Cleveland 13, Ohio and is sent without cost to engineering, specifying, or buying officials of companies listed in Dun & Bradstreet as a manufacturer or processor. It is also sent free to key executives of railroad, steamship, and transportation firms. It is not sent to salesmen, representatives, or other distributors. Paid subscriptions are not accepted. Qualified men can apply for a free subscription by filling out the coupon on the inquiry slip enclosed in this issue. Accepted as Controlled Circulation Publication at Cleveland, Ohio.

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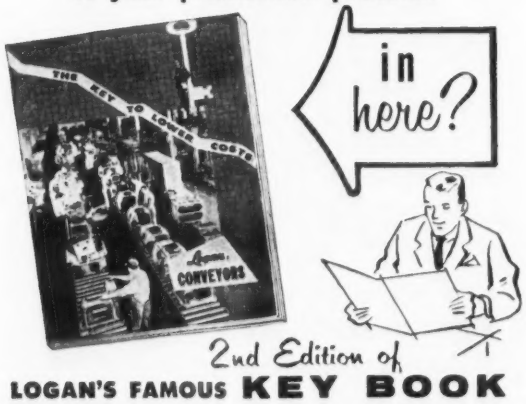
BPA NBP

TEFLON PIPE COMPOUND for pipes carrying acids, alkalies

Recommended for use on chrome, chrome plate, nickel, steel, ceramic, and plastic pipe threads, 25 Teflon pipe compound can also be used to join dissimilar materials. Compound's lubricating qualities prevent galled threads and permit easy dismantling even after long periods of exposure. Good sealing is achieved without application of maximum torque on lines carrying strong acids, alkalies, and solvents at temperatures from 150 to 500° F. Formulated by **Abbott & Biddle** Co., 2417-X44 Federal St., Philadelphia 1, Pa.

▲ For more details circle **NED-32 E8** on enclosed inquiry slip ▲

Is the Answer to your production problem



2nd Edition of
LOGAN'S FAMOUS KEY BOOK

Perhaps the experience of others will help you iron out some of your own materials handling wrinkles. Write today for your copy of the new Logan Key Book containing 24 authentic case histories and 50 installation views.

LOGAN CO., 215 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

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ECONOMY RoLab MULTI JAR LABORATORY MILL

The Economy RoLab Multi Jar Laboratory Jar Mill has a capacity of from one to six jars on the single tier unit. Multiple tier mills provide virtually unlimited capacity.

The rolls are 3¾" in diameter and are covered with neoprene vulcanized to the steel core which is turned and ground to insure concentricity. These heavy rolls are mounted in flange type, self aligning, anti-friction ball bearings for smooth, quiet, trouble free operation.

The driven roll is connected to a right angle gearmotor by means of a flexible coupling. Motors are supplied in 1/3 hp., ½ hp., or ¾ hp., as required, and are available in standard open, TENV or explosion proof and all are interchangeable. The standard electrical characteristics are 115 volts, 60 cycle, 1 phase.

The streamlined design of the mill facilitates easy cleaning. There are no square edges or hidden corners to accumulate materials and dirt. The ends and base are of steel plate, pressed integral. The base is formed with ample radii to give strength and all edges are smooth and uniform. There are no exposed gears, chains, belts or couplings to impair personal safety. The mill comes with a beautiful hammered green lacquer finish. Weight 225 lbs., less jars.

ECONOMY MFG. CO.
EAST LIVERPOOL, OHIO

▲ For more details circle **NED-34 E8** on enclosed inquiry slip ▲

HERE IS A MONEY-SAVING

PORTABLE HEATING UNIT *adaptable for*
WARM FORMING
BILLET HEATING
STRETCH FORMING
ETC.

The **RESLEC HEATER** is exceptionally portable. Take it anywhere in the shop, plug it in, and in a jiffy it can go to work for you heating piece parts for forgings, heading, hot punch press work, heat treating; or warming rods, wires, bars or pipes with controlled heat.

The **RESLEC HEATER** is primarily a controlled electric heating supply with a selection possible from 10% to 90% of the rated output of the transformer. It is sturdily built, supported by heavy-duty casters, and comes in 4 basic models. Custom models, however, are limited only to the power supply and the physical size of a transformer.

The **RESLEC HEATER** can often replace the more costly induction heating. It supplies the answer to many heating problems—and at far less cost. That is why you ought to investigate it. Write today, and let us tell you more about it.

THE HERSCOTT CO., INC.
2500 N. MAIN STREET
ROCKFORD, ILLINOIS

▲ For more details circle **NED-35 E8** on enclosed inquiry slip ▲

Fibre Glass Aluminum Coating protects roofs, lowers temperatures!

A new aluminum roof coating that adds years to roof life while reducing inside temperatures up to 20° is announced by The Garland Co., Cleveland 5, Ohio.

Known as Supercote Aluminum FG, it contains an extra-bright aluminum pigment reinforced with millions of glass fibres. This combination, besides providing a more durable coating, promotes better leafing of the aluminum and a 10% brighter finish. As a result, Supercote Aluminum FG reflects a greater proportion of the sun's rays and lowers under-roof temperatures up to 20°. Also, unlike other materials, it won't darken or "brown-off" with age.

In addition to fibre glass, Supercote Aluminum FG is formulated with special plasticizers and waterproofing oils. These penetrate and resaturate dried out roofing felts, keep coating from becoming brittle and provide a positive bond to old roof surfaces. Addition of long fibre asbestos further increases wear and weather resistance.

Supercote Aluminum FG is recommended for all industrial roofs, schools, hotels, institutions, etc. It is particularly well adapted for use on roofs of air conditioned buildings, where it can effect important savings by cutting electric current requirements.

Available in 5-gallon pails and 55-gallon drums, Supercote Aluminum FG can be easily applied with roofing brush, squeegee or standard spraying equipment. For additional information, request bulletin A-405, **The Garland Co., 3748 E. 91 Street, Cleveland 5, Ohio.** *Advt.*

▲ For more details circle **NED-36 E8** on enclosed inquiry slip ▲

BRAND NEW NAME PLATE MARKER

SCHMIDT PNEUMATIC PLATE STAMPER

- Power operated
- Flexible
- Designed for safety
- Simple operation
- Eliminates fatigue

This GTS designed and built machine guarantees that your plates will be marked with perfect precision: alignment, spacing and depth of characters.

Get all the facts about the GTS Pneumatic Plate Stamper . . . Write for complete information today.

IF IT'S WORTH MAKING, IT'S WORTH MARKING

GEO. T. SCHMIDT, INC.
1800 W. Belle Plaine Avenue
Chicago 13, Illinois

▲ For more details circle **NED-37 E8** on enclosed inquiry slip ▲

MERCOID HERMETICALLY SEALED MERCURY SWITCHES

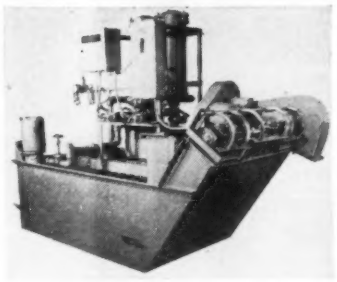
TILTING TYPE AVAILABLE CIRCUITS

THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILL.

Many standard Mercoid switches are available write for Bulletin -54

▲ For more details circle **NED-38 E8** on enclosed inquiry slip ▲

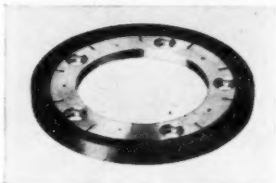
CONTINUOUS COOLANT FILTER back-flushes to maintain flow rate



Adaptable to all types of machining operations ranging from small hand operated systems to complete automated installations, this Henry Backflushing Cartridge Filter will remove particles as small as 5 microns. Offered in 5 to 500 gpm capacities, the fiber, fabric, and metal cartridge has a life of 500 hr or more. It is particularly suited for difficult filtering jobs such as those involving kerosine coolant for cast iron honing. It is also capable of filtering oil, water, and chemicals. Made by **Henry Mfg. Co.**, Box 219, Bowling Green, Ohio.

▲ For more details circle **NED-39 E8** on enclosed inquiry slip ▲

ROTARY SLITTING KNIVES for light-gage alloy steels



Extremely hard cutting edges of these tungsten carbide rotary slitting and trimming knives produce true edges with minimum burr. Knives are designed for trimming light-gage silicon, or high and low carbon steels. They are made of solid tungsten, or with a circular tungsten carbide cutting edge mounted in a heat treated alloy steel body. A wide range of sizes is offered. Made by **Cowles Tool Co.**, 2110 W. 110th St., Cleveland 2, Ohio.

▲ For more details circle **NED-40 E8** on enclosed inquiry slip ▲

LOAD MEASURING INSTRUMENT for any machine tool operation

Constant, visual indication of tool wear is given by this Tool-Gard load measuring instrument, for any machine tool operation. When set on Load-meter position, instrument monitors machine overload or underload condition. In Tool-Gard position, it monitors only tool wear and cancels out the unimportant, noncutting portion of the load. Instrument is offered in 110, 220, 440, and 550 v ac ranges for handling up to 300 amp. Standard stocked ranges are 10 to 50 amp and 40 to 150 amp. Made by **Futurmill, Inc.**, 6360 Highland Rd. N.W., Pontiac, Mich.

▲ For more details circle **NED-41 E8** on enclosed inquiry slip ▲

Aftercooler and Cyclone Separator designed for cleaner, dryer compressed air

The Adams Aftercooler and Cyclone Separator are designed to efficiently condense and remove water from compressed air and process gas. Condensed moisture and entrained dirt and oil are subsequently removed in a cyclone type separator. This unit is scientifically designed for maximum removal efficiency over a wide range of flow rates.

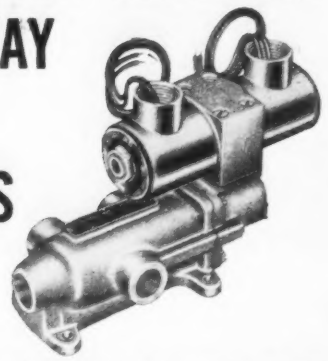
For normal use, units are available to cool gases to within 10° F of the temperature of the cooling water. Specially designed units are available to permit a 2° F approach to cooling water temperature, for application where low moisture content is critical.

Adams Aftercoolers and Separators are available from stock to handle 20 - 40,000 cfm with 10° cooling and 25 - 19,200 cfm where it is necessary to cool within 2°F of the cooling water. Special units can be supplied to suit an unlimited range of requirements. In all cases the maximum pressure loss at rated capacities is ½ psi.

This wide range of sizes enables the economical utilization of Adams Aftercoolers and Separators in virtually all industrial application. For further information on how R. P. Adams' units will solve your compressed air problems and save you money, write today for Bulletin 711. **R. P. Adams Co., Inc., 227 East Park Drive, Buffalo 17, New York.** *Advt.*

▲ For more details circle **NED-42 E8** on enclosed inquiry slip ▲

NEW DOUBLE SOLENOID FOUR-WAY AIR VALVES



. . . permit longer dwell time in either position without continuous electrical energy

. . . make possible amazingly versatile air systems

Designed for long, trouble free service life. Compact in size with full flow. Sturdy cast brass bodies. Valve reversals are air operated, electrically controlled, making for positive seating and positioning every time. N.P. Thd. in ¼", ⅜", ½" and ¾" sizes. Flow capacities: 150 to 425 cu. ft. per minute.

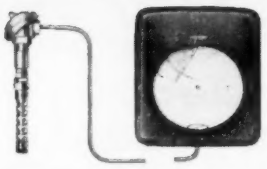
These are among the NEW solenoid valves added to the Schrader lines. For informative literature on these and hundreds of other air products, direct all your air control questions to Schrader.

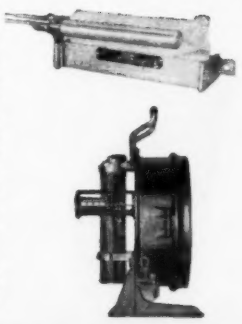
Schrader®

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
459 Vanderbilt Avenue, Brooklyn 38, N. Y.

▲ For more details circle **NED-43 E8** on enclosed inquiry slip ▲

WIDEST RANGE OF EQUIPMENT FOR HUMIDITY RECORDING





No matter what problems you face in obtaining suitable humidity measurements and records, the unique versatility of Foxboro Humidity Instrumentation offers an appropriate solution . . . recorders, recording controllers, and indicators for relative humidity (hygroscopic type) and wet-and-dry bulb measurements, and, using the exclusive Dewcel element, direct reading dewpoint and absolute humidity measurements. Available in portable, close-coupled and long-distance types; with round or rectangular cases.

Get the complete story in Bulletins 11-11A and 11-14A. **The Foxboro Company, 665 Neponset Avenue, Foxboro, Mass., U.S.A.**

FOXBORO HUMIDITY INSTRUMENTS

▲ For more details circle **NED-44 E8** on enclosed inquiry slip ▲

IDEAL ELECTRIC MARKER

Easy to use as a pencil

Marks stock in seconds--

prevents mistakes—loss of tools or parts.

Write a permanent, tamper-proof mark on ANY MATERIAL—it couldn't be simpler! Eliminates needs and expense of many special name plates. Saves cost and time on production line marking of parts. Used with diamond or alloy interchangeable points.

Marks anything from steel to glass or hard rubber. 7200 adjustable cutting strokes per minute — perfect results every time. Has adjusting nut for varying length of stroke—also "ON-OFF" switch in cord for easy control.

Operates from AC outlet

Built for Industrial use

Heavy duty Construction

Long service life

Sold through America's Leading Distributors
In Canada: Irving Smith, Ltd. Montreal

IDEAL INDUSTRIES, Inc.
1032-E Park Ave., Sycamore, Illinois

Please send catalog data on Electric Marker.

Name_____
Company_____
Address_____
City_____ Zone____ State____

▲ For more details circle **NED-45 E8** on enclosed inquiry slip ▲

- Wears up to 100 times longer than steel
- Easily applied to flat or curved surfaces
- High structural strength

Kenplate, newest member of the Kennametal "family" of hard carbide materials, protects metal parts from abrasion and wear. Kenplate is factory-assembled as small hexagonal plates, in a uniform mating pattern on flexible woven-glass backing. Sizes required are obtained by folding the backing and cutting with a knife. Sections are then applied by standard epoxy bonding, silver soldering, or conventional brazing.

Various plate thicknesses from .062" to .250", and two hex sizes are available to meet a wide range of service conditions, such as: wear plates in processing equipment, liners for ball mills, inclined chutes for abrasive materials, machine tool ways, centrifuge surfaces, banding for tool joints on drill pipe, slide surfaces and guide rails for packaging, and canning equipment.

*Trademark 3149

FREE

Bulletin B-106R gives detailed information. Write KENNAMETAL INC., Dept. NED, Latrobe, Pennsylvania.

INDUSTRY AND **KENNAMETAL** ...Partners in Progress

▲ For more details circle **NED-51 E8** on enclosed inquiry slip ▲

NEED RUBBER and VINYL PARTS?

- **Molded**
- **Extruded**
- **Bonded to Metal**

New free folder on ORCO component service

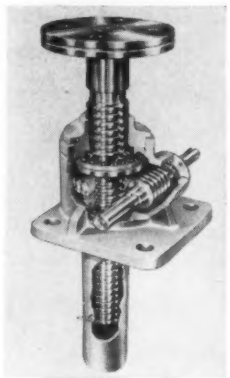
As a "manufacturer's manufacturer" Ohio Rubber is geared to produce large quantities of component parts made of natural rubber, synthetic rubber, silicone rubber, polyurethane, and flexible vinyl—all "customeered" to your specifications.

IT COSTS NOTHING TO FIND OUT how ORCO's technical know-how, facilities and experience can help you solve your component part problem, whatever it is. Just describe your particular requirement. Our technical people will work with you until your requirements have been satisfied. Be sure to send for your free copy of the new ORCO COMPONENT CUSTOMEERING folder.

The OHIO RUBBER Company
A Division of The Eagle-Picher Company
WILLOUGHBY, OHIO

▲ For more details circle **NED-52 E8** on enclosed inquiry slip ▲

WORM GEAR JACKS
2 to 100-ton capacity models



Ability to hold heavy loads in position indefinitely without creep is built into the 1800 Series of worm gear jacks. Adjustment-free mechanical devices have a uniform rate of raise so that jacks of varying capacities can be operated in unison on unevenly distributed loads. Raises up to 24 in. can be furnished. Applications include feeding tables, welding positioners, rolling mills, testing equipment, conveyor lines, jigs, and loading platforms. Capacities of 2, 5, 10, 15, 20, 25, 50, and 100 tons are offered. Made by **Duff-Norton Co.**, 2710 Preble Ave., Pittsburgh 30, Pa.

▲ For more details circle **NED-53 E8** on enclosed inquiry slip ▲

CUSTOM CONVEYOR MAGNETS
in any length or curvature

Designed to fit existing or new conveyors, custom-made magnets are supplied as lightweight assemblies which are positioned underneath conveyor belts. They can be made in any length or curvature. Each assembly consists of Alnico-V horseshoe type permanent magnets fastened to steel pole pieces. The proper magnetic strength for each application is obtained by spacing of blocks and pole pieces. Made by **Dings Magnetic Separator Co.**, 4758 W. Electric Ave., Milwaukee 46, Wis.

▲ For more details circle **NED-54 E8** on enclosed inquiry slip ▲

SPRAY NOZZLES
can be installed in limited space

Body of ½-GA Series FullJet spray nozzles provides a 90-degree angle elbow turn adapting them for use where space is limited. Where the spray must be directed at a 90-degree angle to the inlet pipe, these nozzles can be installed without additional fittings. Uniform, full-cone spray pattern is offered in 65 and 120-degree spray angles. Application is in cooling and washing equipment. Made by **Spraying Systems Co.**, 3211 Randolph St., Bellwood, Ill.

▲ For more details circle **NED-55 E8** on enclosed inquiry slip ▲

PREVENT LADDER SLIPPING ACCIDENTS

UNIVERSAL LADDER SHOES

UNDERWRITERS' APPROVED
for all types of floors and surfaces

Combination cord-rubber tread holds firm to wet or dry surfaces, ridges cut through oil and grease to provide a secure grip. Sharp spike for soft surfaces, snow and ice. Adopted by many companies for general service.

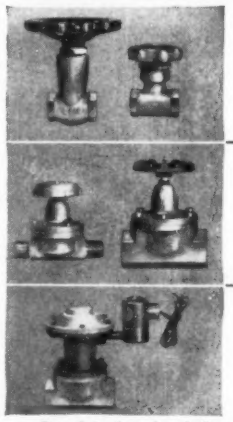
WRITE FOR BULLETIN NO. 9

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2807 N. Fourth Street • Philadelphia 33, Pa.

▲ For more details circle **NED-56 E8** on enclosed inquiry slip ▲

New from AIRCO–
5 FORGED BRASS VALVES
for gases and liquids...

Here are five new forged brass valves offering many unusual, high efficiency, low maintenance features. Developed, proved, and extensively used by Air Reduction in high pressure gas piping systems, they're now offered to industry.



Master Valves • 3000 psi • ½"–⅜" —For both all-on-all-off and throttling. Special Kel-F and Fiber Glass compound seating provide tight shut-off and high impact resistance.

Non-Return Shut-Off • 250 psi • 1"–½" —Check and shut-off in one complete assembly. Low pressure drop. Ideal for station outlet and pipeline.

Pneumatic Electric • 150 psi • 1" —Efficiency independent of differential pressure. Operable from remote control by system fluid or externally. Solenoid pilot optional.

Send today for information on these all-new valves.

AIRCO *Industrial distributor and dealer inquiries invited*
AIR REDUCTION SALES COMPANY
Equipment Manufacturing Plant,
Dept. BV, Clermont Terrace, Union, N. J.

▲ For more details circle **NED-57 E8** on enclosed inquiry slip ▲

anywhere *any time*

the **TUCK-AWAY** *table is ready in seconds!*

Now, any room becomes a recreation area quickly, easily . . . with the TUCK-AWAY *folding* tennis table. The TUCK-AWAY is built for lasting service, minimum storage requirements, and speedy, *safe* operation. Finished in flat green with white court lines, the TUCK-AWAY is regulation size and features "Floating Fold" for easy, positive action. So safe a child can operate it; so sturdy it's guaranteed for ten years!

new **FREE** *booklet*

. . . tells the complete story on the TUCK-AWAY. Write for your copy today!

SICO **manufacturing company, inc.** Dept. 515
5217 EDEN AVENUE SOUTH, MINNEAPOLIS 24, MINNESOTA

▲ For more details circle **NED-58 E8** on enclosed inquiry slip ▲

WRIGHT SAFEWAYS
Your Best Buy for Rigging and Maintenance Work

12 Sizes
½-ton to 50 tons

Bulletin 412A gives complete details on the many outstanding features that make Wright Safeways your best buy for long, trouble-free life. Write York, Pa. for your copy.

Some Safeway Features

Load Chain is finest alloy, every foot proof-tested...heat treated for hard wear-resistant working surface...ductile to withstand shock loads..."wick" lubricated...anti-rust zinc coat.

Load and Idler Sheaves rotate on life-lubricated, antifriction bearings...minimum of 5 pockets in Big Sheaves for efficiency and long life.

Gears, Pinions, Drive Spindle (also top and bottom Hooks) are nickel-chrome-molybdenum alloy steel mounted on heavy-duty, antifriction bearings. *Gear Train* is enclosed in oil-tight chamber.

Load Brake is Weston type, silent, dependable.

Steel Housing fully protects vulnerable parts.

Wright Hoist Division
AMERICAN CHAIN & CABLE
York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

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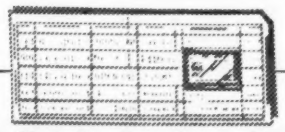

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Aperture Cards

An engineer we know recently said:

"You fellows at Filmsort always talk about how to save time and money for the big guy. What about me with my hundred thousand tracings? Can I use this microfilm and file card you call an Aperture?"

The answer is you don't have to be big to use Filmsort—just practical.

Why not ask us to send our new booklet, "The Filmsort Aperture Card for Your Engineering Drawings and Allied Records".

The Filmsort Company

Pearl River, New York

A DIVISION OF MIEHLE-GOSS-DEXTER, INC.

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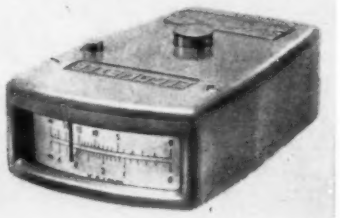
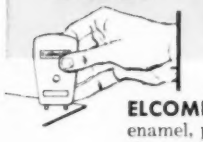
Measures Nonmagnetic Coatings with ± 5% ± .0001" accuracy

NEW pocket-size THICKNESS GAUGE





ELCOMETER measures thickness of porcelain enamel, paints, platings, foils, glass, paper, plastics, and other nonmagnetic coatings quickly and accurately. Gauges flat or curved surfaces and hard-to-get-at spots easily. Needle locking device assures correct reading every time. Complete with tough leather case containing inner pocket for test strips. Weighs only 6 oz. Completely self-contained.

FREE TRIAL. Ask your purchasing agent to order an Elcometer on trial basis. Retail price, F.O.B. Cleveland **ONLY $75.00**

FERRO

FERRO CORPORATION

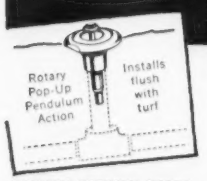
4151 East 56th Street • Cleveland 5, Ohio

▲ For more details circle NED-61 E8 on enclosed inquiry slip ▲

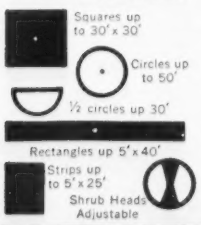
Just 3 *

RAIN JET SPRINKLERS

FOR A MORE BEAUTIFUL LAWN AT HALF THE COST!



VARIOUS PATTERN HEADS



Three RAIN JET heads outperform 20 ordinary sprinklers! Coverage is uniform and thorough from head to edge...no brown spots, no puddling. Because much more lawn is covered per head, you save considerably on pipe and fittings. Installation time is reduced 75%.

★ LESS PIPE...SMALLER SIZES NEEDED
★ EASY MAINTENANCE
★ IDEAL FOR AUTOMATIC CONTROLS
★ UNCONDITIONALLY GUARANTEED

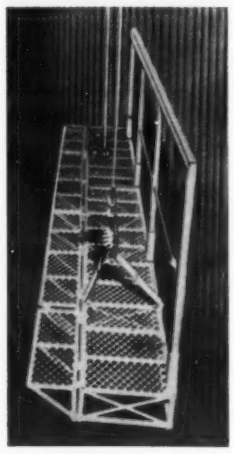
Square pattern heads **4.95.** Strip pattern heads **3.95.** Round pattern heads **1.95, 3.95, 6.25.** Available on stands from **6.95** available through plumbing supply jobbers

PLANNING SERVICE AVAILABLE OR SEND 25c FOR "HOW TO INSTALL" BROCHURE

RAIN JET CORP., 301 S. Flower St., Burbank, California

▲ For more details circle NED-62 E8 on enclosed inquiry slip ▲

HOIST SCAFFOLD designed for boiler maintenance



Boiler construction or repair is facilitated by the Atlas boiler scaffold which can be easily installed and moved. Unit allows for communication between man in boiler and outside operator and makes it possible to hoist materials inside the boiler. It is easily dismantled and stored, and is self-cleaning. Adequate load capacity assures safety to personnel. Made by **Atlas Industrial Corp.**, 845-ND 39th St., Brooklyn 32, N. Y.

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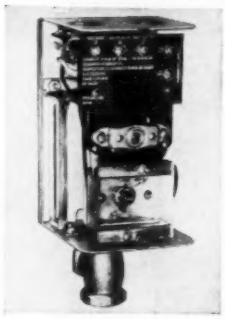
MOTORIZED VALVE controls heating systems



Used as a control valve for heating systems, this motorized valve is suitable for applications where a number of circuits, such as heat zones in a building, are operated from the same reservoir or supply. It is operated by its own two-wire low voltage thermostat or control. When control calls for flow, valve is opened and built-in contact closes, starting the circulator. Valves must be used with Relay-Transformer RT-10. Valves have female pipe threads and angle pattern only. Made by **Edwards Engineering Corp.**, Dept. Z, Pompton Plains, N. J.

▲ For more details circle NED-64 E8 on enclosed inquiry slip ▲

PLANT MARKING KIT 474 markers cover 59 plant subjects

The 474 individual markers contained in the Plant Marking Kit pertain to over 59 of the most essential plant operating subjects. Markings are special I Meyercord transfers designed for easy application and permanent adhesion to painted or bare metal surfaces, either curved or flat. They are unaffected by prolonged contact with moisture. Cost is estimated at one-tenth that of hand painting or stenciling. Offered by **Meyercord Co.**, Dept. NE8, 5323 W. Lake St., Chicago 44, Ill.

▲ For more details circle NED-65 E8 on enclosed inquiry slip ▲

the first REAL ADVANCE in freeze proof

ROTARY JOINTS!

PACKLESS
SELF LUBRICATING
GUARANTEED LEAK PROOF

Phillips Exacto is not just another rotary joint but a complete new exclusive design guaranteed to eliminate "seizing or freezing on the roll." It operates at steam pressure up to 250 p.s.i. with temperatures up to 500° F. and speeds to 1,000 r.p.m.

Flexible Self-Aligning feature permits easy installation. Minimum turning torque and unique internal pressure relief design gives uninterrupted service with added savings in horse power. Available in both TF and S types, **PHILLIPS EXACTO** is stocked in sizes ¼" through 2".

Performance test a pair of **PHILLIPS ROTARY JOINTS** in your own plant on a 60 day free trial basis. Prove to yourself the amazing results other manufacturers have had with this new Joint.

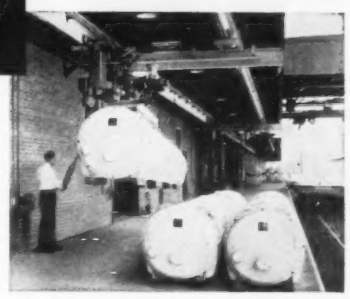
PHILLIPS EXACTO® ROTARY JOINTS *Pat. Pending

PHILLIPS COMPANY INC.
5711-C Boulevard East, West New York, N. J.

▲ For more details circle NED-66 E8 on enclosed inquiry slip ▲

SPAN MASTER

CRANES and MONORAIL SYSTEMS



Spanmaster crane easily and efficiently handles large tanks on loading dock and flat cars. Sizes and types available for every handling need.

- Multi-runway systems
- Single or double girder
- Spans up to 120 feet
- Motorized or hand operated types, cab or floor controlled
- Capacities to 15 tons
- High carbon hardened rail, long-wearing raised tread
- Forged and hardened steel wheels
- Ball joint suspension

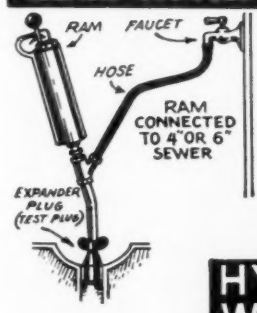
For Descriptive Literature, write to:

WEBB

SPANMASTER CRANE DIVISION
JERVIS B. WEBB COMPANY
8921 ALPINE AVENUE • DETROIT 4, MICHIGAN
OFFICES THROUGHOUT THE WORLD

▲ For more details circle NED-67 E8 on enclosed inquiry slip ▲

CLEARS CLOGGED DRAINS in Seconds!



The ideal plumbing service tool. Can pay for itself in one application!

Smashes through the most stubborn blockages, then flushes clean — all in one operation!

Comes equipped with self-contained manual compressor (can charge Ram to 100 lbs. in 30 seconds!) and drain adaptors in 6 sizes!

HYDRAULIC WATER RAM

Anyone can operate it! Thousands already in use, have saved *millions* of dollars in industry and institutions. Why lose time, suffer inconvenience, waste dollars needlessly on either completely blocked or slow-moving sewers, drains, fixtures? The HYDRAULIC WATER RAM clears severest stoppages with SPLIT-SECOND HYDROSTATIC IMPACT! . . . Shatters blockage, then flushes clean. No snakes, chemicals, cables. No pushing through. Works perfectly, *vent or no vent!* Nothing to wear out. You risk nothing on our 30 day free trial offer, at our expense. Write for details.

Works perfectly with all clogged fixtures, toilets, sinks, urinals, etc. Equipped with 4" rubber cone, ideal for toilets, *plus* set of 5 tapered adaptor plugs for other drains or sewers.

Write for Information, Prices, Free Trial Offer — Today!

HYDRAULIC MANUFACTURING CO.
DEPT.-NED-5 KIEL, WISCONSIN

▲ For more details circle NED-68 E8 on enclosed inquiry slip ▲

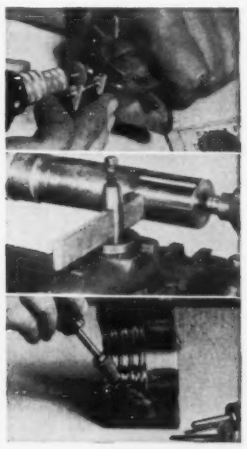
CUT COSTS SAVE TIME IMPROVE QUALITY

use **CRATEX** Rubberized Abrasives

for MICRO-DEBURRING, SMOOTHING, CLEANING, POLISHING on HARD or SOFT METALS and other materials

4 grit textures
Course — C • Medium — M
Fine — F • Extra Fine — XF

WHEELS • POINTS • BLOCKS STICKS • CONES for power or manual application and dimensional control. CRATEX is sold through leading industrial supply distributors.



For actual field application reports on how CRATEX "cushioned action" can cut costs in your own operations, send this coupon.

CRATEX MANUFACTURING COMPANY
1600 Rollins Road, Burlingame, California

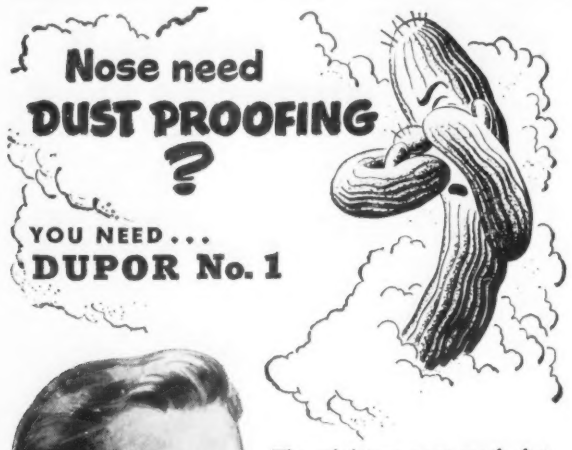
● Please send Catalog and CRATEX Application data for:

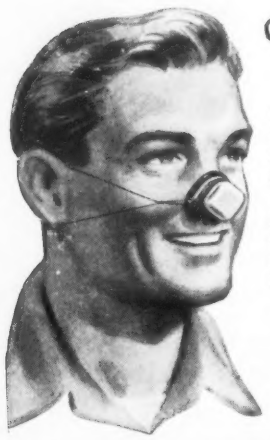
Name ..... ☐ Stainless Steel
Title ..... ☐ Aluminum
Company ..... ☐ Brass & Bronze
Street ..... ☐ Cast Iron
City ..... Zone ..... State ..... ☐ Heat-treated Steel
☐ Special Alloys

▲ For more details circle NED-69 E8 on enclosed inquiry slip ▲

Nose need DUST PROOFING ?

YOU NEED... DUPOR No. 1





The miniature nose mask that is as handy as a pair of glasses. So light, less than 1 ounce. So convenient it can be worn while smoking, eating, talking. Amazing 9 sq. in. filter. Vest pocket size. Can be carried, ready for use instantly. Write for details! Send $1.20 today for sample!

H. S. COVER, P. O. Box 2508
South Bend 14, Indiana

"Respirators for Industry since 1894"

For more details circle NED-70 E8 on enclosed inquiry slip

RECEIVING...PRODUCTION... WAREHOUSE...SHIPPING... MAINTENANCE

every department can use the CM CYCLONE HIGH-SPEED—HEAVY DUTY—ALUMINUM ALLOY CHAIN HOIST

CAPACITIES: ¼ TO 10 TON

● Help your men get lifting jobs done quicker, safer, with less physical effort. Increase labor dollar return. PORTABLE—Carry with one hand. EASY OPERATION—Less hand chain pull. LOW HEADROOM—Highest possible lift. CM-ALLOY flexible welded load chain. Lifetime lubrication. *More CYCLONE Hoists are in use today than any other hoist in their class.*

CYCLONE CATALOG NO. 145

Illustrates, describes and prices all models. Sent on request or ask your CM Distributor.

CM HOISTS AND CHAIN

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

In Canada: McKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONT.

For more details circle NED-71 E8 on enclosed inquiry slip

Make Them Safe This Easy Practical Way

Architecturally approved method to make worn, dangerous stairs safe and modern. Just superimpose ALUMINUM STAIR-MASTER SAFETY TREADS over worn stairs. Safety-ribs contain diamond-hard abrasive grit for positive, anti-slip protection. Minimize accidents — end makeshift repairs. Can't corrode or rust.

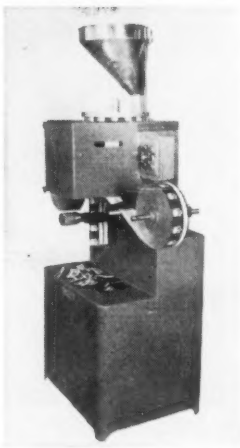
FREE New Bulletin shows how to repair worn stairs GET FULL DETAILS

WOOSTER PRODUCTS INC. S-16
Spruce St., Wooster, Ohio

Name_____ Title_____
Company_____
Address_____
City_____ State_____

For more details circle NED-72 E8 on enclosed inquiry slip

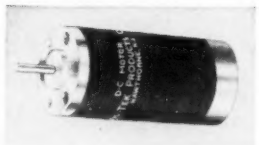
VERTICAL PACKAGING MACHINE
package size adjusts without parts



Package size adjustments for width and length are made without changing parts in this Pak-Rapid high speed, continuous motion, vertical packaging machine. It will accept any heat-sealing packaging material except unsupported plastic film. Cantilever construction with deep throat access allows over-conveyor installation. Various feeding devices for handling liquids, gases, powders, granular, and solid items are interchangeable. Machine will fabricate packages using one supply roll and will register print front and back. It has electronic temperature control and sensing devices, variable speed motor drive, and one-shot lubrication system. Made by **Pak-Rapid Inc.**, 1816 Elizabeth St., West Conshohocken, Pa.

For more details circle NED-73 E8 on enclosed inquiry slip

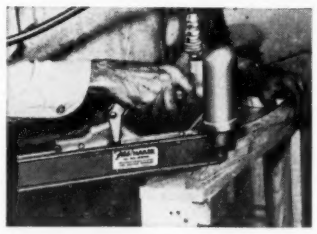
MINIATURE MOTOR
torque ratings increased



Improved Series B miniature permanent - magnet motors have increased torque ratings although diameter still measures only 1 in. Stock models are available in popular voltages up to 115 v dc. Balanced armature revolve on shielded ball bearings, and special windings or mounting arrangements are offered. Under-load speed of 7200 rpm is recommended for many applications. Available no-load speeds range from 3000 to 20,000 rpm. Made by **Servo-Tek Products Co.**, Dept. ED, 1086 Goffle Rd., Hawthorne, N. J.

For more details circle NED-74 E8 on enclosed inquiry slip

AIR-OPERATING NAILER
sets up to 100 nails per minute



Weighing only 3½ lb, the Fas' Nail portable, air - operated, hand nailer performs the operations of an ordinary hammer, including clinching, toe nailing, and driving a nail in any position. Standard box nails can be driven and set automatically at a rate of 90 to 100 per minute. Vertical and horizontal operation are possible. Bright and annular ringed styles of 1¼ and 1½-in. nails can be driven. Made by **International Staple & Machine Co.**, Fas' Nail Div., 802 E. Herrin St., Herrin, Ill.

For more details circle NED-75 E8 on enclosed inquiry slip

Buschman ALUMINUM "QUICK-EEZ" Wheel & Roller Conveyors

JUST OFF THE PRESS Complete Literature WRITE TODAY!

Portable yet rugged . . . Now ALUMINUM gravity conveyors by Buschman make it easy to set up efficient systems "on the spot" for efficient handling in all types of industry.

"QUICK-EEZ" Coupling—both ends the same—keeps your system *flexible* for cost cutting—customized handling. Rearrangement is faster—more economical.

NEW Bulletin 19 gives complete specifications on Buschman ALUMINUM Wheel & Roller Conveyors. Write today!

C-847-EWB

Every Way Better
EWB THE E. W. BUSCHMAN CO.
4482 Clifton Avenue Cincinnati 32, Ohio

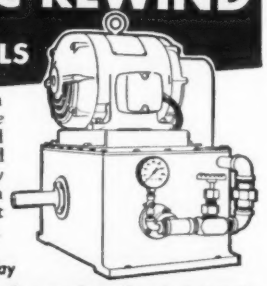
CONVEYORS FOR EVERY INDUSTRY

For more details circle NED-76 E8 on enclosed inquiry slip

NOW... Precise Rewind Adjustments

Constant, Accurate Tension in Rewinding Plastics, Paper, Adhesives, Film, Foil,

Stanford MODEL FB-1 HYDRAULIC REWIND for all WEB MATERIALS



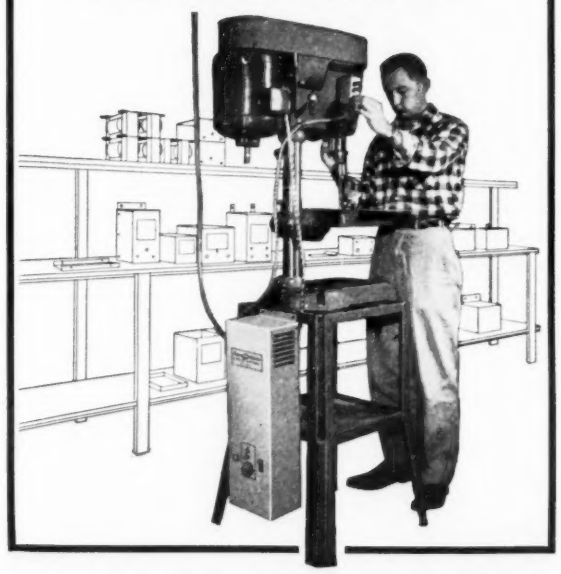
NO MORE s-t-r-e-t-c-h on polyethylene . . . no more *squeeze* on adhesive-coated or laminated stock! Stanford Hydraulic rewind gives you positive, *completely adjustable* tension control from start to finish. Saves its own cost *and more* in time and material.

Write, Wire, or Phone Today for the complete "Stanford Story"

Stanford ENGINEERING COMPANY
SALEM, ILLINOIS • PHONE: SALEM 553
Canadian Reps: Manton Brothers, Ltd., Toronto
Mfrs. of Slitters, Web Guides, Rewinding and Constant Tension Equipment

For more details circle NED-77 E8 on enclosed inquiry slip

GET ANY SPEED YOU NEED FROM YOUR DRILL PRESS

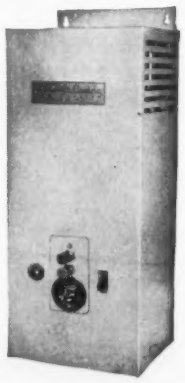


MOTOR SHAFT SPEEDS FROM 1 RPM TO 1750 RPM PLUS

This was a standard drill press equipped with step-toe transmission and a constant speed motor. Its operation was limited to a few set speeds, seldom entirely satisfactory for the variety of work it was called upon to perform.

Then a Rev-O-Trol with proper motor replaced the step-toe transmission and AC motor. Now the motor speed can be controlled, on a simple dial, from 1 RPM to above 1750 RPM rated shaft speed. Exactly the right speed and rated torque for the job and the tool is always available.

THIS NEW CONTROL GIVES NEW PRODUCTION LIFE TO MANY SHOP TOOLS

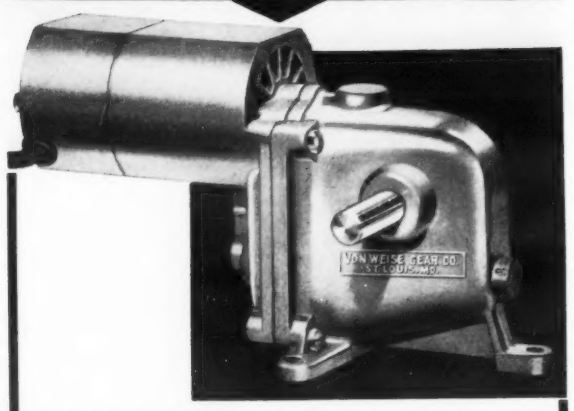


Rev-O-Trol converts 230 volt AC to direct current and provides full range speed control, with 100% torque available at all speeds from standstill to full motor speed rating and above. Such speed flexibility gives many advantages in production. Write for Bulletin R-313.

ACME ELECTRIC CORPORATION
305 WATER STREET • CUBA, NEW YORK
MANUFACTURERS OF
REV-O-TROL

For more details circle NED-78 E8 on enclosed inquiry slip

ECONOMY GEARMOTOR
To fit Your Product



Compact, lightweight gearmotor, powered by a 1/15 H. P., Universal motor which will produce up to 450 in. lbs at 2.8 R.P.M.

Available in 6 ratios up to 100 R.P.M.

Write for bulletin.

Territories open for Manufacturer's Representatives

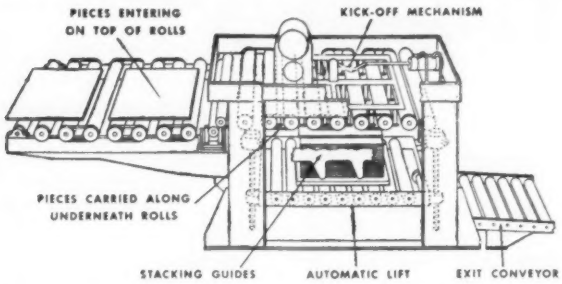
von Weise Gear Company

9353 Watson Industrial Park St. Louis 19, Mo.

For more details circle NED-79 E8 on enclosed inquiry slip

AUTOMATIC STACKER & FEEDER
magnetic rubber rolls convey pieces of any shape to and from machines

Stacking and feeding of any ferrous piece measuring from 12 x 12 in. to 36 x 48 in. and up to 0.030 in. thick is function of the Herr automatic stacker and



feeder. It can handle any square, rectangular, circular, oval, or other odd-shaped pieces, including those with spider-like legs. Machine's conveying rolls are covered with Denmag, a magnetic material made by compounding neoprene or other rubber and plastic substances with small particles of various permanent magnetic materials.

The Denmag-covered rolls convey the pieces to or from the stacking area, depending upon whether the machine is being used for stacking or feeding. Feeding requires each piece to be lifted off the stack with vacuum cups prior to being conveyed magnetically on the Denmag rolls. Two or more machines can be interlocked in operation, to provide continuous and uninterrupted stacking or feeding. Made by **Herr Equipment Corp.**, 1422 Vine St., Warren, Ohio.

For more details circle NED-82 E8 on enclosed inquiry slip

It's faster to SHOOT than FISH

NOW you can run a line through conduit in SECONDS instead of HOURS with

NEW Jet Line Gun

Here's the new tool for contractors that makes SNAKING and FISHING obsolete. Now you put a line through conduit in seconds instead of hours. Just load the Jet Line Gun with a CO_2 cartridge, line attached. Fire gun into conduit. Cartridge becomes projectile. Goes around ells, bends; up or down for 100 to 250 feet, or more. Cartridge and line pop out open end of conduit. Pull heavier line through, then pull in wire. Call your nearby GRAYBAR office for a demonstration! Or write for literature. 83

GRAYBAR ELECTRIC COMPANY, INC.
420 Lexington Ave., New York 17, N. Y.

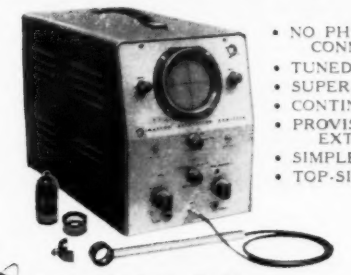
Call Graybar *first* for . . . Everything Electrical Graybar

IN OVER 130 PRINCIPAL CITIES

For more details circle NED-85 E8 on enclosed inquiry slip

for **FOOL-PROOF TROUBLE-SHOOTING** *of Electronic Equipment*

***NEW* WAVE-FORM ANALYZER . . .**



- NO PHYSICAL CONNECTION
- TUNED CIRCUITS
- SUPER SENSITIVE
- CONTINUOUS SWEEP
- PROVISION FOR EXTERNAL SYNC.
- SIMPLE CONTROLS
- TOP-SIDE CHECKING

KINGSTON ABSORPTION ANALYZER

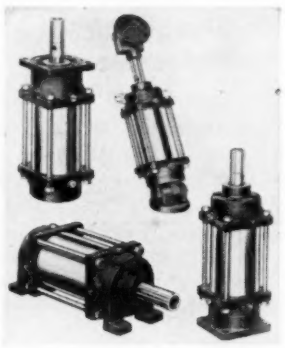
A simple to operate, highly sensitive trouble-shooter and tester for use on any equipment having periodic or recurrent waveforms. Unique electrostatic probe allows top-side checking without any physical connection. Rotary tuner for frequencies from 3 to 240mc.

Write today for Bulletin 103-A.

KINGSTON ELECTRONIC CORPORATION
MEDFIELD, MASSACHUSETTS, U. S. A.

For more details circle NED-80 E8 on enclosed inquiry slip

AIR CYLINDERS
four double-acting models and sizes



Horizontal, vertical, pivot, and face-mounted models are available in 1½, 2½, 3¼, and 4-in. bore sizes in line of double-acting air cylinders. Basic cylinders are alike, but the mountings are interchangeable. All models have internal cushioning at both ends, but can be converted to semicushioned or noncushioned operation. Meehanite ram has a 3 to 1 bearing surface to diameter ratio. Ram bearing is in a quick-detachable cartridge with ram seals and rod wipers of Hy-Car. Built for 250 psi, the cylinders have high tensile end caps and hard-chromed rams. End caps of horizontal models can be rotated to place air inlets on the side desired. Made by **Mead Specialties Co.**, Dept. AC-40, 4114 N. Knox Ave., Chicago 41, Ill.

For more details circle NED-83 E8 on enclosed inquiry slip

NOW!

Branded for lifetime identification

HOW IT'S DONE: The mark is embossed onto, not stamped into, the chain.

CHAIN BUYERS & USERS—Now you can be sure of the make of chain you are getting and of the grade (strength) of the chain you are using...a definite safety advantage. Presently available on Inswell Proof Coil, BBB, High Test and Herc-Alloy chain in all sizes under ½".

SPECIFY "CM" CHAIN

CM HOISTS AND CHAIN

COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK

Regional Offices: NEW YORK CHICAGO • CLEVELAND SAN FRANCISCO • LOS ANGELES

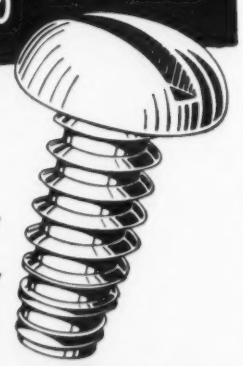
In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ontario

For more details circle NED-86 E8 on enclosed inquiry slip

Proved way to cut assembly costs

P-K® hardened

Self-Tapping Screws



- Eliminate tapping, soldering, riveting, bolting
- Stay tight under vibration
- dependable, uniform quality

Save time and money in fastening metals—plastics—laminates

Type Z Slotted or Phillips

IF IT'S P-K IT'S O.K.

PARKER-KALON®
THE ORIGINAL SELF-TAPPING SCREWS
Parker-Kalon Division • General American Transportation Corporation • Clifton, New Jersey

For more details circle NED-81 E8 on enclosed inquiry slip

Imperial HI-DUTY TUBE CUTTER
Features free-wheeling ball-bearing action. Roller-type with flare cut-off groove. Retractable reamer. Includes spare cutting wheel carried in recess under reamer. No. 274-F for ⅛ to 1" O. D. tubing. Each $3.95. Other models for sizes up to 2¼" O. D.

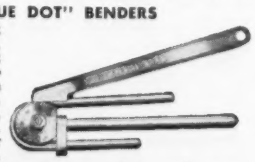
IMPERIAL Tubing Tools

Outperform, Outlast all others

Exclusive design advances cut your costs on tube installation and replacement

Imperial ROL-AIR FLARING TOOL
Rolls flares in the air then automatically burnishes them to a high polish. Tight joints every time! Can't mar tubing. No. 500-F flares 3/16, ¼, 5/16, ⅜, ½, ⅝" O. D. tubing. Each $9.95. Other models for 37°, 45° and double flares in sizes to 2" O. D.

Imperial "BLUE DOT" BENDERS
Bend hard or soft tubing — form neat, accurate bends to a short radius — any angle up to 180°. Position anywhere on tubing. No. 364-FH shown. Individual benders for 3/16, ¼, 5/16, ⅜, 7/16, ½, ⅝, ¾, ⅞" O. D. tubing. Also combination benders for ¼ to ⅞" O. D. and gear-type benders.



Order from your Wholesaler TODAY. *Emblem of Quality*

IMPERIAL THE IMPERIAL BRASS MFG. CO. Dept. NED58 6300 W. Howard St., Chicago 31, Ill.

In Canada: 18 Hook Ave., Toronto, Ontario

FITTINGS • VALVES • TOOLS for Cutting • Flaring • Bending • Swaging • Tube Closure

For more details circle NED-84 E8 on enclosed inquiry slip

AN INDISPENSABLE FIRST-AID INSTRUMENT

G-S EYE SWEEP

Double Purpose

MAGNET AND LOOP

$2.50

For removing metallic particles, dirt, chips, any foreign matter from the eye.

Magnetic tip easily picks up the smallest piece of iron or steel. Flexible loop is very convenient for removing cinders, dirt and non-magnetic particles.

Sterilization will not affect magnetic properties or loop. A hard rubber carrying case is provided with each G-S Eye Sweep.

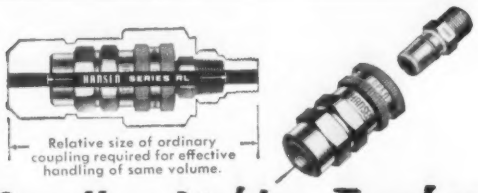
ORDER TODAY DIRECT OR SEND FOR COMPLETE DATA

A DEPENDABLE GUIDE TO SAFETY
GENERAL SCIENTIFIC EQUIPMENT COMPANY
TESTED INDUSTRIAL SAFETY PRODUCTS

7518 Limekiln Street, Philadelphia 50, Pa.

RESPIRATORS • PUMPS • GOGGLES • SHIELDS • GLOVES • APRONS • HELMETS

For more details circle NED-87 E8 on enclosed inquiry slip



Smaller, Lighter, Tougher

HANSEN SERIES RL

PNEUMATIC QUICK-CONNECTIVE RING-LOCK COUPLINGS

Hansen Series RL One-Way Shut-Off Couplings will handle any job in your shop using ¼" to ⅛" connections—from the air line to the air tool. All Hansen Series 2-RL Sockets and Plugs are interchangeable with each other as are all Sockets and Plugs of the larger capacity Series 3-RL.

Consequently, by standardizing on either series, you eliminate any need for various size couplings in your hookup—make it easy to keep stock of parts in balance and hold inventories to a minimum.

Locking ring provides positive lock and assures tight fit. Equipped with automatic sleeve lock.

Two-Way Shut-Off and Straight-Through Couplings also available.
WRITE FOR CATALOG
Representatives in Principal Cities

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 35, OHIO

For more details circle NED-90 E8 on enclosed inquiry slip

If you burn coal

OXI CRYSTALS

will increase boiler efficiency!

By adding OXI Crystals you get more heat and steam with less fuel, minimize smoke, insure full boiler output at all times, completely oxidize all combustible deposits from firedoor to the top of the stack . . . all this with very little labor involved.

OXI Crystals will also get rid of slag, firescale, encrusted carbon and soot in your boiler . . . *fast!*

We are so confident that OXI will satisfy you we offer it under an iron-clad guarantee.

Learn more about this amazing product. Write today for full information

Also ask about KOR, the perfect fuel oil conditioner . . . and SURFBLOW, the floating boiler water skimmer.

OXI CORPORATION
55-Box 485
GARY, INDIANA

For more details circle NED-91 E8 on enclosed inquiry slip

TRY UNISORB LEVEL-RITE MOUNTS ON SPECIAL TRIAL OFFER!

Save up to 75% mounting time with Unisorb Level-Rite every time you install or move a machine. Plus, absorb up to 85% transmitted vibration, reduce noise, improve machine operation. The right density and thickness for every machine.

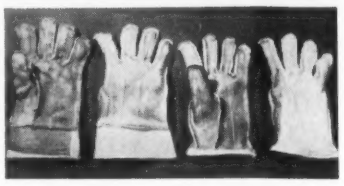
Tell us what type of machine you want to mount on Unisorb, and we'll send the right type and density. If not satisfied, return within 30 days and we'll cancel the invoice.

WANT MORE INFORMATION?
Send for set of Unisorb "Facts" Books.
Use Reader Service Card.

UNISORB
THE FELTERS COMPANY
224 SOUTH ST., BOSTON 11, MASS.
MANUFACTURERS OF FELT AND FELT PRODUCTS.

For more details circle NED-92 E8 on enclosed inquiry slip

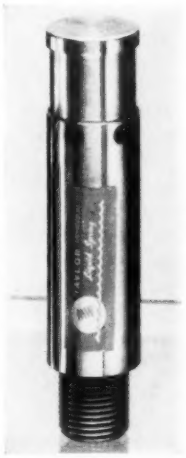
SAFETY GLOVES have steel mesh inner liners



Mesh - Gard safety gloves feature inserts made of multilayer, fine, flexible, steel mesh sewed into an expansible glove. Developed for handling sheet metal in the steel and stamping industries, the protective inner liner protects worker's hands from sharp, jagged cuts. Four styles are offered. Made by **Safety Clothing & Equipment Co.**, 1984 E. 69th St., Cleveland 3, Ohio.

For more details circle NED-93 E8 on enclosed inquiry slip

LIQUID SHOCK ABSORBER has built-in time delay return



Self-contained time delay return of 1 sec is standard in this Liquid Spring Shok. It can be modified to provide time delay return of up to ½ hr on a ½-in. stroke. It is also available with adjustable energy absorption rates. The full line with time delay includes sizes up to 44,000 in. lb of energy absorption with up to 2-in. strokes. Absorption is adjustable up to 98 per cent of the input. Any mounting arrangement and any input velocity can be built into these units which operate on a compressible liquid principle. Made by **Taylor Devices, Inc.**, 192 Main St., North Tonawanda, N. Y.

For more details circle NED-94 E8 on enclosed inquiry slip

HOT & COLD WATER DISPENSER base has a 1-cu ft refrigerator

Both 50° F drinking water and 185° F water for making hot drinks are dispensed by the Cool-R-Frig. Freezing compartment of over 1 cu ft with two aluminum ice cube trays and a full-length recessed door for refrigerated storage are built into the unit which also has an unrefrigerated compartment for storage of instant hot-mix products. Up to 60 cups of hot drinks can be served per hour. The 15 x 15 x 39⅜-in. unit holds either a 3 or 5-gal water bottle. Made by **Sunroc Corp.**, Div. CF, Glen Riddle, Pa.

For more details circle NED-95 E8 on enclosed inquiry slip

- Corrosion-Resistant
- Meters Acids, Alkalies, Slurries, Gases
- Extremely Short Length
- Very Low Head Loss

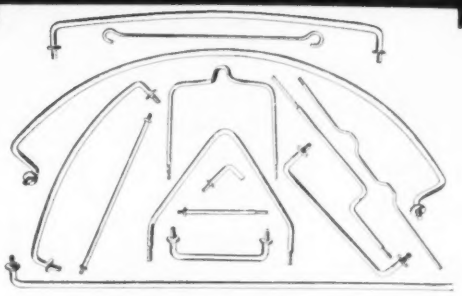
Request Bulletin 115-R1 describing Model DFT-PI Dall Flow Tube — the new, low cost, low-loss differential producer. Rugged insert-type unit constructed of epoxy or polyester resins reinforced with fiberglas — with corrosion-resistant metallic throat-ring and flange.

Write to **Builders-Providence, Inc., 425 Harris Avenue, Providence 1, Rhode Island.**

BUILDERS-PROVIDENCE
DIVISION OF
B-I-F INDUSTRIES
METERS FEEDERS CONTROLS

For more details circle NED-96 E8 on enclosed inquiry slip

When production demands FAST delivery of Headed and Threaded FASTENERS-



...rely on Ohio Rod Products for—

PROMPT SERVICE . . . Our new equipment guarantees fastest production and quicker deliveries.

DEPENDABLE QUALITY . . . Uniformity and accurate processing. All items conform to UNF Class 2A fit.

FASTER METHODS OF MANUFACTURE cut your costs in time and money and speeds up your production.

Send drawings or blueprints for quotes and literature.

OHIO ROD PRODUCTS CO., INC.
20252 1st AVENUE • BEREA, OHIO

For more details circle NED-97 E8 on enclosed inquiry slip

NEW! MOTORIZED LIFT TRUCK BATTERY CHARGER ELIMINATES SPECIAL WIRING

C&D AutoReg* Silicon Chargers
A PRODUCT OF C&D BATTERIES, INC. OF CONSHOHOCKEN, PA. — ATTICA, IND.

- No special wiring required.
- Plugs into a standard 15-ampere, 60-cycle, 115 v convenience outlet.
- Long, trouble-free life.
- Convection cooled, requires no maintenance.
- No aging adjustments required.
- Can be wall or battery mounted.
- Fully automatic; portable.
- For all 12-volt hand motorized lift truck batteries, up to 660 A.H.

*Trademark

Write for complete details in Bulletin AR-100.

Manufacturers of *Slyver-Clad*® Industrial Batteries. *PlastiCal*® and *PlastiCell* Batteries for Communications, Control and Auxiliary Power

For more details circle NED-98 E8 on enclosed inquiry slip

HIGHEST ACCURACY . . . LOW COST

MERCURY PRESSURE GAUGES

For any low-pressure air or gas application, Meriam Mercury Pressure Gauges provide *permanent* accuracy and economy.

Recalibration or checking is never required. No gears, diaphragms, springs, levers or pivots are involved. Mercury pressure gauges are always accurate.

Direct reading in ounces, pounds or inches of water...ranges are available to eight pounds or equivalent. Special features provide overrange protection.

WRITE FOR BULLETIN P-10

THE MERIAM INSTRUMENT CO.
10920 Madison Avenue
Cleveland 2, Ohio

Pressure and Vacuum Gauges, Liquid Level Gauges and Flowmeters

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NOW—WELD THAT PRECISION ASSEMBLY

If you're joining metals from .0002 to .060 in size, you, too, can enjoy the speed, simplicity, reliability, and economy of Weldmatic welding. Write for complete technical data. Weldmatic Model 1015 illus. Delivery from stock. PRICE $675.00 F.O.B. Pasadena

WELDMATIC
DIVISION OF UNITEK CORPORATION
271 North Halstead Avenue, Pasadena, California
Sales engineering representatives in principal cities

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SAVE $ WITH ATLAS

SHORT STUBBY JAWS
GREATER STRENGTH
SAFETY AT HIGH SPEEDS

Balanced to operate without vibration at all speeds. Short, stubby jaw design gives maximum resitance to spread. Larger diameter joints fitted with big grease reservoir. Standard alloy, steel joints in fifteen sizes for all requirements. Also made in Bronze, Monel and other special metals.

Universal Slip Shafts a speciality.

UNIVERSAL JOINTS

A	C	D	Weight Each
¾"	⅞"	2¾"	.20 lbs.
⅞"	⅞"	2¼"	.34 lbs.
1"	⅞"	3"	.61 lbs.
1 ⅛"	⅞"	3"	.82 lbs.
1 ¼"	1⅛"	3¾"	1.14 lbs.
1 ½"	1⅜"	4½"	2.07 lbs.
1 ¾"	1⅝"	5¼"	3.2 lbs.
2"	1⅞"	6"	4.86 lbs.
2 ⅜"	2⅜"	7½"	9. lbs.
2 11/16"	2⅝"	8¼"	13. lbs.
3 ⅛"	3"	9½"	19.5 lbs.
4 ⅛"	3⅝"	11½"	40. lbs.
5 ⅛"	5¼"	15¾"	80. lbs.
6"	6"	18"	140. lbs.
7 ¾"	6"	18"	200. lbs.

ATLAS STANDARD DOUBLE JOINT

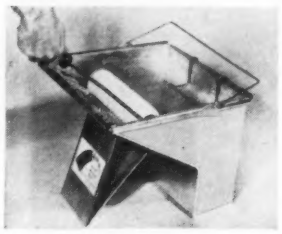
Save money with the only line of STANDARD double universal joints! Twelve sizes available from stock! Write for details.

WEST COAST REPRESENTATIVES
LINK-BELT CO.
LOS ANGELES — SAN FRANCISCO
PORTLAND — OAKLAND
SEATTLE — SPOKANE

GRAY & PRIOR
THE GRAY & PRIOR MACHINE CO. 601 WINDSOR ST. HARTFORD 1, CONN.

▲ For more details circle NED-101 E8 on enclosed inquiry slip ▲

ROLLER PAINTING PAIL
in 1, 3, and 5-gal capacities



Galvanized steel Paint Roller Pail has space to rest roller, a square corner lip to simplify paint pouring, and a wire handle. Sizes are available for 9, 14, and 18-in. rollers and hold, respectively, 1, 3, and 5 gal of paint. Dirty rollers can be cleaned in the pail, which stores up to 12 clean rollers between jobs. Pails will nest for stacking. Made by **Cole Products Corp.**, Box 4812D, Austin, Tex.

▲ For more details circle NED-103 E8 on enclosed inquiry slip ▲

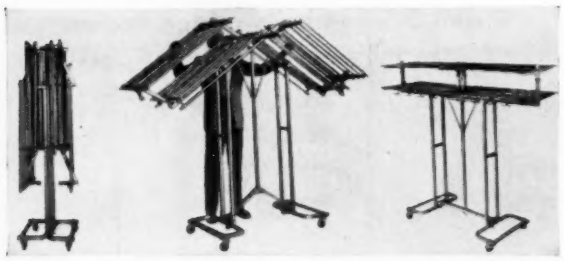
RECOIL TUBING
for protecting screws and rods

Particularly suited for use on metalworking machines, various configurations of these recoil tubes afford protection for lead screws, worms, Acme threads, and slow-cycling piston rods. Made of neoprene base materials and self-supporting, these extensible tubes exclude coolant spray, chips, grit, dust, and abrasive particles. Variety of end fastening collars and flanges is available to suit need. Made by **A&A Mfg. Co.**, Dept. GC-1, 712 S. 12th St., Milwaukee 4, Wis.

▲ For more details circle NED-104 E8 on enclosed inquiry slip ▲

COAT & HAT RACK
folds for storage in small closet

VeeP hat and coat rack will fold up for storage in a 4 x 10-ft closet, or for wheeling through narrow doorways on its large ball-bearing casters. Rack opens



up into a rigid, 6½-ft long unit that holds 72 coats and hats. Setup of rack takes only 2 or 3 sec. It is built of square tubular plated steel with anodized aluminum tube hat shelves. Racks can have rails for garment hangers, or anchor coat hooks suspended in staggered rows from lower hat shelf. Made by **Vogel-Peterson Co.**, Dept. P-8, 1127 W. 37th St., Chicago 9, Ill.

▲ For more details circle NED-105 E8 on enclosed inquiry slip ▲

AURAND
CLEANING TOOLS
ELECTRIC OR PNEUMATIC

Zip away SCALE RUST PAINT

Powerful rotary chipping action completely removes stubborn accumulations from iron, steel, brick, concrete, etc. with less effort. Adjustable depth shoe for controlling depth of cut. Renewable cutter heads. Two sizes in both electric and pneumatic models. Lightweight.

Write for the money-saving facts.

AURAND MFG. & EQUIP. CO.
1322 Ellis St. • Cincinnati 23, Ohio

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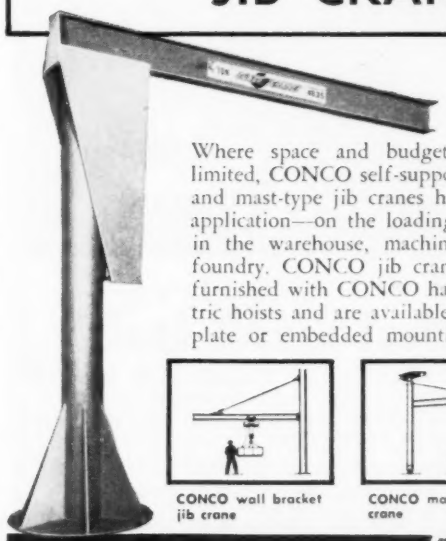
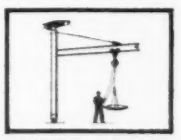
MOTOR DRIVEN or HAND OPERATED
CONCO JIB CRANES



Where space and budget are both limited, CONCO self-supporting, wall and mast-type jib cranes have a wide application—on the loading platform, in the warehouse, machine shop or foundry. CONCO jib cranes may be furnished with CONCO hand or electric hoists and are available with floor plate or embedded mounting.

CONCO wall bracket jib crane



CONCO mast-type jib crane

CONCO ENGINEERING WORKS
Division of H. D. CONKEY & COMPANY
57 Grove Street • Mendota, Illinois
AFFILIATES Conco Engineering Works-Domestic Heating Equipment
Conco Building Products, Inc., Brick, Tile, Stone

CRANES HOISTS CONCO

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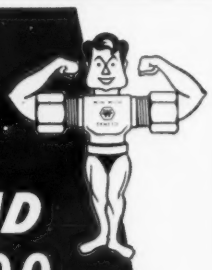
DESIGN, PLANNING AND MAINTENANCE MEN YOU CAN WIN YOURSELVES A HUNK OF DOUGH IN THIS . . .



WEATHERHEAD
$15,000.00
"WIN WITH ERMETO" CONTEST

1ST PRIZE..... $1500.00
2ND PRIZE..... $1000.00
NEXT 8 EACH..... $ 750.00
Plus 175 Other Winners

WEATHERHEAD
FIRST IN HYDRAULIC COMPONENTS
THE WEATHERHEAD CO.
FORT WAYNE DIVISION
Dept. P-5, 128 West Washington Blvd., Fort Wayne, Indiana
In Canada: The Weatherhead Co., Ltd., St. Thomas, Ontario

ERMETO
Strongest high pressure fitting in the world!

Perhaps no other fitting has contributed more to advancements in the field of hydraulics or has attained wider recognition and usage in critical applications than has the famous Weatherhead Ermeto flareless tube fitting. Not only is the Ermeto fitting known for its greater dependability where high pressures, excessive temperatures, surge and vibration are vital factors; it is also popular for its simple, low-cost installation and maintenance advantages as compared to other types of high pressure fittings.

The Weatherhead Company has on file many case histories authenticating the unequalled performance of Ermeto fittings. Without question there are many other types of applications on which we do not have full technical data. With this contest as an incentive and with your cooperation, we hope to be able to compile and make available to engineers and users everywhere a broad range of valuable application data which should offer solutions to some of your most troublesome engineering problems. Weatherhead's most important obligation is the development of ways and means for the advancement of the fluid power industry.

CONTEST RULES

1. This contest is open to everyone actively associated with the design and/or maintenance and operation of equipment in any type or field of industry or commerce including independent design or service engineers. Not eligible are personnel of the Weatherhead Company, its distribution outlets or its advertising agency.
2. At top of first page of each entry must appear contestant's name, home address and phone number; company name, address, phone number.
3. In preparing your entry use **only one side** of sheet or sheets.
4. Contestant may enter as many different types of Ermeto applications as he wishes but each must be a separate finished manuscript in itself.
5. Contest ends September 30, 1958 and entries must be postmarked no later than midnight of that date. In case of a tie, duplicate awards will be made.
6. Judging the contest will be qualified graduate engineers not associated with Weatherhead Company or its sales outlets. Their decisions will be final.
7. All entries must be based on actual installations backed by factual data which can be fully verified.
8. All entries become the property of the Weatherhead Company.

AWARDS

1st Prize		$ 1,500.00
2nd Prize		1,000.00
Next 8 Winners	$750.00 each	6,000.00
Next 35 Winners	100.00 each	3,500.00
Next 40 Winners	50.00 each	2,000.00
Next 100 Winners	10.00 each	1,000.00
Tot. Winners 185	Tot. Cash Awards	$15,000.00

CONTESTANTS PLEASE NOTE!

For additional reprints of this ad or for further contest information, contact your local Weatherhead distributor or write Win With Ermeto Contest, P. O. Box 2457, Fort Wayne, Indiana.

TO HELP YOU PREPARE A WINNING ENTRY

1. Your entry will be judged on the basis of how fully it covers all the facts relative to the installation you are describing. It should point up how or why Weatherhead flareless Ermeto tube fittings helped master a problem or achieve greater economy.
2. Drawings of the installation and pictures should accompany your manuscript if at all possible.
3. Unusual applications, excessive pressures or heat conditions, problems of surge or vibration, all are important data for your manuscript.
4. The following is offered as a guide to you in completing your manuscript . . . Type of equipment and its end product or function • Specific supporting function of the Ermeto equipped circuit • Location of equipment • Climatic conditions of equipment area • Restricting factors surrounding equipment • Downtime and maintenance factors • Style and material of Ermeto fittings and number in circuit • Material of connecting tubings • Working pressures • Maximum shock or impulse load • Maximum and minimum working temperatures of circuit • Vibration-maximum deflection factors • Type of hydraulic fluid used • Thickness of tube walls • To what piping specifications does circuit conform • Service life of Ermeto fittings being used • Savings or other economy factors resulting from use of Ermeto fittings.

Mail Entries to:
WIN WITH ERMETO CONTEST
P. O. Box 2457, Fort Wayne, Indiana

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PERECO *Electric* TUBE FURNACE

Available in operating temperatures up to 2800° F.

- Horizontal or vertical models—in Cabinet or Trunnion mounted.
- Selection of tube lengths and diameters.
- Either hollow silicon carbide (tubular) water cooled element, or ceramic tube surrounded by air-cooled silicon carbide elements.
- Designed for either normal or extremely rapid heat-up.
- Precision controls for wide range temperature control and turndown.
- Interlocked "Fail-Safe" protective devices combined with highest quality unit construction.

Pereco's years of experience and world-wide recognition as electric furnace specialists is assurance of their ability to help you with your requirements. Write.

PERENY EQUIPMENT CO.
Dept. G, 893 Chambers Rd., Columbus 12, Ohio
Export Office: Ad. Auriema, Inc., 89 Broad St., New York 4, N. Y.

PERENY EQUIPMENT COLUMBUS OHIO

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NEW WAY TO

Prevent Faucet Leaks!

★ **9 out of 10 washers are fastened with screws that are TOO LONG or SHORT. The screws quickly loosen; the loosened washers are destroyed thru grind and squeeze of opening and closing faucets.**

34 years of research uncovers new solution

★ **Now, NEW (Patented) 'Sexauer' SELF-LOCK Monel screws, with an imbedded expanding NYLON PLUG, lock at the required depth AUTOMATICALLY, hold washers FIRMLY! Made of rustproof, non-corroding Monel, heads don't twist off, screw slots don't distort. They are easily removed when necessary, can be re-used repeatedly.**

★ **Used with NEW 'Sexauer' EASY-TITE faucet washers, they make a combination that outlasts past faucet repairs "6-to-1"! EASY-TITES are made of super-tough, pliable du Pont compound (neither rubber nor fibre) and reinforced, like a tire, with a vulcanized layer of Fiberglas. They resist distortion and splitting from shut-off grind and squeeze.**

Hidden costs of faucet leaks!

Faucet leaks are costly! As authenticated by Hackensack, N. J. Water Co. and American Gas Association, stopping just ONE PIN-HOLE SIZE (1/32") LEAK can reduce water waste 8,000 gal. quarterly. If a HOT WATER FAUCET LEAK, water and fuel savings JUMP to over $7.58 QUARTERLY—plus additional savings on MATERIALS, LABOR and costly FIXTURE REPLACEMENTS!

NEW SELF-LOCK screws and EASY-TITE faucet washers are just TWO of the "SEXAUER" line of over 3000 TRIPLE-WEAR plumbing repair parts and Pat'd. precision tools.

A "SEXAUER" Technician in your vicinity will make our NEW 126 page Catalog "H" available. He will gladly consult with you regarding a SURVEY of your plumbing fixtures to determine correct repair parts required and establish reasonable stock levels that avoid both overstocking and shortages—thus providing for efficient stock arrangement and control—all without obligation. WRITE TODAY!

J. A. Sexauer Mfg. Co., Inc., Dept. AU-58
2503-05 Third Ave., New York 51, N. Y.

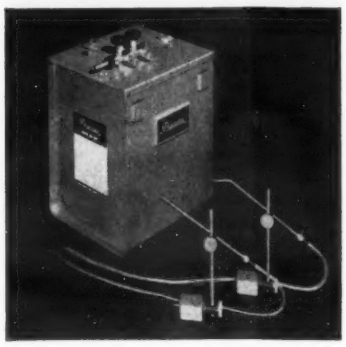
Gentlemen: *Please send me a copy of your NEW, 126 page catalog "H."*

My Name _____ Title _____
Company or Institution _____
City _____ Zone _____ State _____

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

▲ For more details circle **NED-109 E8** on enclosed inquiry slip ▲

COOLANT-COOLING SYSTEM minimizes cutting tool friction



Machining, tapping, drilling, grinding, and metal drawing are but a few of the metalworking operations that can be improved with this Vapor-Lub coolant-refrigerating system. It is reported to reduce temperatures in the work areas and apply atomized lubricating concentrate to the tool and work surfaces. Sudden expansion of compressed air through a precision nozzle absorbs heat from the work area and reduces work surface temperatures up to 20° F below ambient. System is portable and can be transferred from machine to machine. Made by **Precise Products Corp.**, Blue River Road, Racine, Wis.

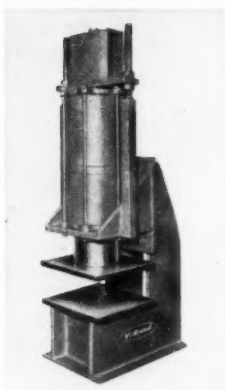
▲ For more details circle **NED-110 E8** on enclosed inquiry slip ▲

SAFETY RELIEF VALVES for pressures up to 12,000 psi

Materials used in Series 44 safety relief valves are compatible to helium, nitrogen, liquid oxygen, red fuming nitric acid, and other caustic solutions and gases. They are suited for pressures up to 12,000 psi. Inlet connections are Aminco superpressure, AND, or NPT type. Valves will reseat bubble-tight after hundreds of cycles. Stocked sizes are 44-1 up to ¾-in. NPT equivalent and 44-2 up to 1-in. NPT equivalent. Made by **Fluid Mechanics Co.**, Dept. ND, Box 194, Bellaire, Tex.

▲ For more details circle **NED-111 E8** on enclosed inquiry slip ▲

PLATEN ARBOR PRESSES 5 and 7½-ton units added to line



Added to the Vi-Speed line of air-powered platen arbor presses are 5 and 7½-ton models, each of which has removable 12 x 12-in. platens. Presses will perform bending, forming, laminating, broaching, and other shop operations. They have adjustable power thrust, 4 or 8-in. stroke, 6½-in. diameter nonrotating rams, 7½-in. throat, and 12¾-in. maximum daylight opening. Prices range upward from $535. Made by **Van Products Co.**, 5766 Swanville Rd., Erie 7, Pa.

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CRANE RAIL

& ALL CRANE-RUNWAY MATERIAL

Send for Catalog NE-5

Get your complete crane runway needs . . . "faster" . . . from Foster warehouse stocks. We carry all crane rail sections drilled for hook belts when required (12# to 175#), plus splice bars, crane stops, bolts, clips, bearing plates, hook and anchor bolts. Experienced crane-runway personnel can help in your ordering.

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PARTS COSTS HIGH?

Shown 1/37 actual size

try HACKNEY deep drawn components

Why use components made with heavy castings, forgings or weldments? Hackney deep drawn shapes and shells may do the job better, at lower cost.

Hackney-made parts are strong, lightweight, seamless, uniform in dimensions. Can be made in steel, stainless steel, nickel, aluminum, magnesium, copper or alloy metals. Capacities: one quart to 100 gallons.

Design engineers are invited to send sketches of problems to our Engineering Department.

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Pressed Steel Tank Company
Manufacturer of Hackney Products
1450 S. 66th Street, Milwaukee 14, Wisconsin
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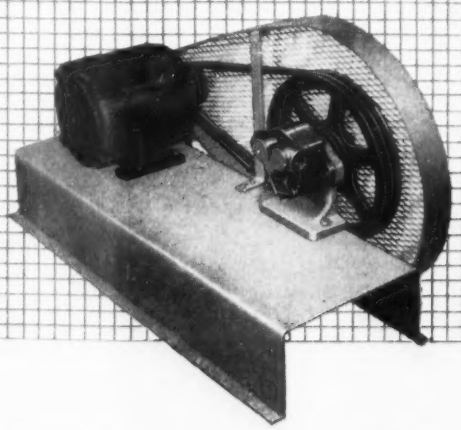
CONTAINERS AND PRESSURE VESSELS FOR GASES, LIQUIDS AND SOLIDS

▲ For more details circle **NED-115 E8** on enclosed inquiry slip ▲

from Webster... NEW SUPPLY PUMP EQUIPMENT



to handle no. 5 and 6 furnace oils

Webster direct drive units are motor driven at 900 rpm optimum speed — relatively low speed lengthens pump life. Capacities and pressures of belt driven sets can be varied to meet specific requirements by changing size of pulleys.

franklin adv. A-121

call the man from Webster

Now the efficiency and high operating performance of Webster supply pumps are available for commercial and industrial applications requiring the handling of heavy oils. The new Webster heavy oil pumps are built in either direct drive or belt drive units with motors ranging from ¼ h.p. to 2 h.p. Plenty of capacity, too . . . from 28 to 575 gph, with pressures up to 300 psi. Extra large ports mean initially cold, heavy oils can be handled without restrictions.

New Webster pumps are compact, easy to install — require less plumbing.

Write for additional information.

HEATING DIVISION
WEBSTER ELECTRIC
RACINE · WIS

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Send Now For Facts On Bulk Materials Handling . . .

BULLETIN FK-26A

Fuller-Kinyon Bulletin FK-26A describes how a Fuller-Kinyon conveying system specially designed for dry bulk materials handling to meet your specific requirements can cut handling costs, increase efficiency, provide top sustained production with minimum maintenance. This bulletin demonstrates the many applications of these conveying systems in solving tough dry bulk materials handling problems.

Now, while you think of it, send for Bulletin FK-26A on improved materials handling methods and systems.

3750
P-167

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FULLER COMPANY,
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SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION
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Now! feed parts automatically with Feedall

ELEVATING FEEDERS — For fully automatic feed and orientation of rolling or sliding parts

HOPPER FEEDERS — For high production with minimum handling

BAR FEEDERS — For continuous feed 5 to 20 fpm. Completely self-contained units with variable speed.

TO CUT COSTS: ADD COMPLETE AUTOMATIC FEED ON FAST PRODUCTION MACHINES

Feedall Automatics have now been used with exceptional results to feed gear blanks, valve plugs, steel or plastic bushings, bars up to 1-1/2" x 30" long, and scores of widely varied parts. These time and cost-saving machines add storage capacity, save manpower, boost production, cut unit costs. And engineering design is outstanding.

NEW CATALOG contains all data, includes estimate sheet. Write for your copy today.

Feedall *Producers of automatic feeding devices*
FEEDALL, INC. • WILLOUGHBY, OHIO

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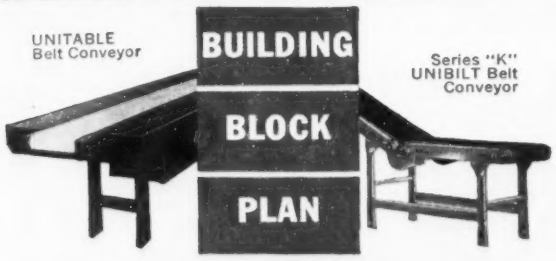


Simplifies Setting Up Conveyor Systems

Without special tools or special skill you can set up a Conveyor system to meet your particular requirements using the Conveyor Specialty Building Block Plan.

Standard UNIBILT Conveyor units fit together like building blocks . . . are interchangeable so you can easily alter the system to meet changing handling requirements.

Here's a way to save time and money through prefabrication and pre-engineering yet gain the advantages of a custom tailored conveyor system.

Write for descriptive literature to

CONVEYOR SPECIALTY COMPANY
37 Newport Avenue, North Quincy 71, Massachusetts
Distributors in principal cities

KEEP **CONVEYOR SPECIALTY** IN MIND

A complete line of package handling conveyors and conveyor systems.

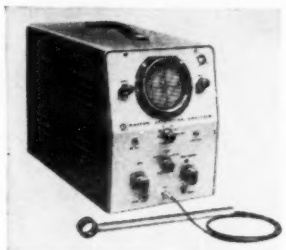
▲ For more details circle NED-118 E8 on enclosed inquiry slip ▲

LUBRICATION DECAL KIT identifies lubrication points

Preventive maintenance kit for marking lubrication systems provides Type G transfers, or Lubri-Cals, for positive identification of lubrication points. The decals are resistant to abrasion, weathering, oil immersion, and temperature variations. Kit consists of 4276 markings which provide the proper frequency of numerals, letters, and instruction nameplates for identifying lubrication points and for specifying the required lubricants for each application. A "Lubrication Guide" is included. Made by **Meyercord Co.**, Dept. NE8, 5323 W. Lake St., Chicago 44, Ill.

▲ For more details circle NED-119 E8 on enclosed inquiry slip ▲

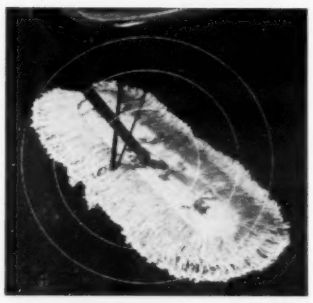
WAVE-FORM ANALYZER tests electronic equipment



An electrostatic coupling probe in the Model EA-1 wave-form or absorption analyzer eliminates the need for physical contact during testing or trouble-shooting of electronic equipment. A 12-position rotary tuner offers frequencies from 3 to 240 mc. Large, small, crescent, or envelope probes pick off the signal from various stages in the circuit for display of its wave-form on the cathode ray tube. High impedance earphones can be used for aural monitoring. The 18-lb instrument is easily set up for testing tubes in their circuits, or for use as a field strength indicator, oscilloscope, waveform analyzer, or signal tracer. Made by **Kingston Electronic Corp.**, 33 North St., Medfield, Mass.

▲ For more details circle NED-120 E8 on enclosed inquiry slip ▲

ROTATING MOP FRAME used with rigid or swivel action



Rotating the center handle of this mop frame enables it to cover 360 degrees of a surface area without lifting it from the floor. It can be used for rigid or swivel action and is easily handled in hard-to-reach areas. Made by **Zelinkoff Co.**, Dept. D, Wichita 1, Kans.

▲ For more details circle NED-121 E8 on enclosed inquiry slip ▲

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to do more jobs for you . . . all described in the

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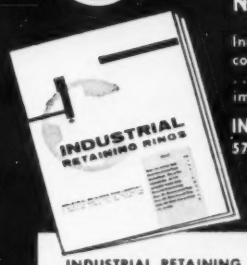

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CITY _____ ZONE _____ STATE _____ N 5

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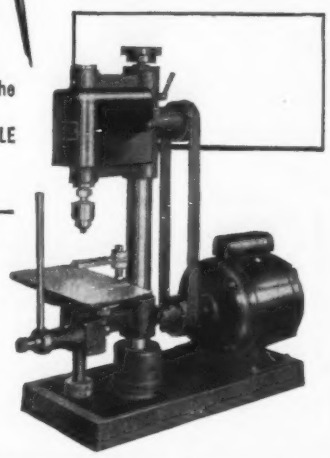
Now YOU CAN TAP PRECISION HOLES IN BRITTLE MATERIALS OR THIN SHEETS



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1/4" x 24 maximum

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IT'S A **Hamilton Tool**
USE IT WITH CONFIDENCE

2464

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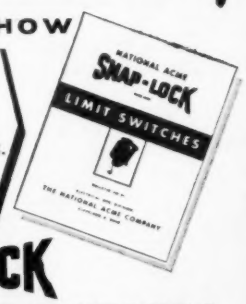
LIMIT SWITCH *users!*

FIND OUT HOW

you can get extra dependability, extra ruggedness without extra cost. Write for our Bulletin EM-51.



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LIMIT SWITCHES

Made by machine tool builders to machine tool specifications.
The most reliable Limit Switches available for heavy-duty service.

Electrical Manufacturing Division
National Acme
The National Acme Company, 182 E. 131st St., Cleveland 8, Ohio

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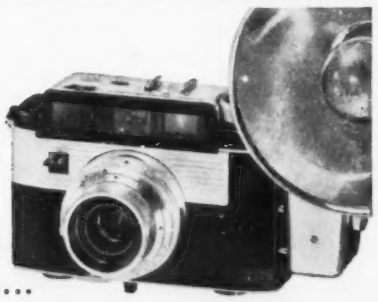

Precision-built 35mm cameras . . . perfect for slides, record pictures, reporting

Kodak Signet 50 Camera with built-in exposure meter, includes direct-fitting Kodalite Super-M 4 Flasholder. Has sharp, corrected *f*/2.8 lens, fast enough for many in-plant pictures on Tri-X Film by existing light. Shutter speed and lens-opening scales are cross coupled for quick setting. Lists for just $82.50* complete.

Kodak Signet 30 Camera is budget-priced at just $55.00* for photographers who do not require a built-in meter. The Signet 30 has same fast *f*/2.8 lens, same projected field frame finder, same rapid thumb-lever film advance as Signet 50. Both cameras are designed for quick, easy loading, and carry exposure information right on the camera.

FREE BOOKLET gives information on the Kodak Signet 30 and 50 Cameras.

**Prices are list, include Federal Tax, and are subject to change without notice.*

Kodak

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

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SERVING INDUSTRY FOR 76 YEARS

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THE C.O. JELLIFF MANUFACTURING CORP.
Southport • Connecticut • USA

For more details circle NED-128 E8 on enclosed inquiry slip

the first of its kind

a more versatile medium for

pressure sensitive instant adhesion

ANGIER'S Double-Face PRESSURE SENSITIVE Transfer Film

Entirely different from conventional double-coated tapes. "Double-Face" is a specially reinforced pressure sensitive mass incorporating the features of conformance, adhesion and aggressive tack provided by many liquid pressure sensitive applications. It is a **translucent** pressure sensitive mass in film form supported by a double-coated release paper which can be either removed at once for instant bonding or at a later date if used on a consumer product.

- adaptable to a full variety of porous and non-porous materials.
- conforms to highly irregular surfaces.
- can be slit or die cut with protective release paper in place.
- eliminates drying and coating equipment.
- speeds production — reduces waste.

Available in rolls: Widths: 1/8" up to 54"
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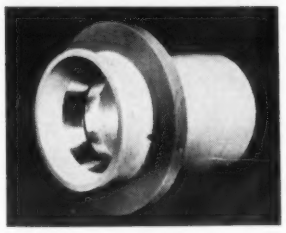
3 Types: SOFT MEDIUM FIRM

Write for samples, specifications and prices.

ANGIER ADHESIVES
DIVISION OF INTERCHEMICAL CORPORATION
120 Potter St. Cambridge 42, Mass.
Midwestern Plant: HUNTINGTON, IND.

For more details circle NED-129 E8 on enclosed inquiry slip

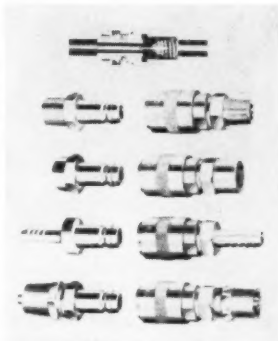
FLOW TUBE
meters problem fluids



Ordinary liquids and gases and "difficult" fluids such as acids, alkalies, and slurries can be metered with very low head loss by this compact, insert-type Dall flow tube. The Model DFT-PI unit is made of epoxy or polyester resins, reinforced with Fiberglas, and has a corrosion resistant metallic throat-ring and flange. Its short length simplifies installation between pipe flanges. Accuracy is within ±1 per cent of actual flow rate for uncalibrated units, or ±½ per cent by laboratory calibration. Various metallic constructions take from 0.2 to 10 pH fluids. Temperature ranges are from −60 to 220° F. Made by **Builders-Providence, Inc.**, 425 Harris Ave., Providence 1, R. I.

For more details circle NED-130 E8 on enclosed inquiry slip

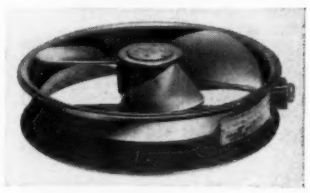
QUICK-CONNECT COUPLINGS
pressure rated up to 10,000 psi



Interchangeable with other makes of couplings, Series D quick-connect and disconnect couplings are offered in ¼, ⅜, ½, and ¾-in. sizes with working pressures up to 10,000 psi. Male, female, hose stem, and re-usable hose end connections are made. Couplings lock with push of one hand without turning or twisting. The 360-degree swivel action minimizes hose kinking. Made by **Perfecting Service Co.**, Dept. D, 332 Atando Ave., Charlotte 6, N. C.

For more details circle NED-131 E8 on enclosed inquiry slip

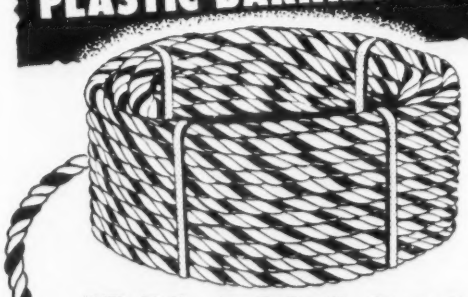
ELECTRONIC CONSOLE FAN
motor is built into propeller hub



Usable with a washable dust filter, this saucer-shaped fan for cooling of electronic console equipment has its driving motor built into the propeller hub. Fan's axial length is no more than the thickness of the propeller. Fan measures 7 x 2½ in. and weighs 1 lb 9 oz. Air delivery is 260 cfm against zero static pressure. Airflow in either direction is obtained by reversing the fan end-to-end. Operation is on 115 v, 50-60 cycles, ac. Made by **Rotron Mfg. Co.**, Schoonmaker Street, Woodstock, N. Y.

For more details circle NED-132 E8 on enclosed inquiry slip

HIGH VISIBILITY PLASTIC BARRIER ROPE



IPCO POLY-ROPE®

Triple strand rope of polyethylene plastic; two strands of yellow, one of black. Immediately identifies a restricted area in that it carries out the standard CAUTION colors. Tensile strength over 1200 pounds. No sag or stretch. Durability for long service life. Used and recommended by all types of industry.

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NOW ONLY $99.50!
for information and literature, see your dealer or write:
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611 BROADWAY, NEW YORK 12, N.Y.

For more details circle NED-134 E8 on enclosed inquiry slip

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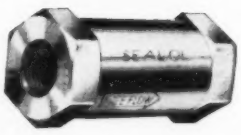
FOR LIQUIDS, VAPORS AND GASES

ROTARY JOINTS
Steam pressures to 150 PSI, fluids to 350 PSI — also vacuum service. Speeds to 1,750, temperatures to 425° F. Send for Bull. #14.

SWIVEL JOINTS
Pressures to 3,500 PSI, temperatures to 350° F for industrial applications. Special aircraft types meet or exceed Spec. MIL J-5513. Send for Bull. #15.

CHECK VALVES
For Aircraft & Industrial applications. Pressures to 3000 PSI. Temperatures from − 300° F. to 750° F. First choice of USN Submarine Service. Mfg. to Mil. Spec. MIL-V-5524-A. Send for Bull. #16.



SEALOL
SEALOL CORP, 265 Post Road, Providence 5, R. I.

For more details circle NED-135 E8 on enclosed inquiry slip

MAKE YOUR OWN CRANE...
...at a NEW LOW COST!

Handle loads up to 2000 lbs., SAFELY,
easily... Buy crane beam locally—we furnish the rest... A pair of self-aligning, ball bearing Flexo-Crane trucks cost only..... $96.00
Simple instructions come with shipment.

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Complete Flexo-Crane, with hoist and accessories, is also economically priced. To get full details, ask for —
BULLETIN F-114

The Abell-Howe Line includes a wide range of overhead cranes monorails, hoists and accessories.

ABELL-HOWE COMPANY 7747 VAN BUREN ST. FOREST PARK, ILL.

For more details circle NED-136 E8 on enclosed inquiry slip

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in the
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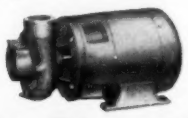
MOTORPUMP

For more than 90 years Ingersoll-Rand pumps have demonstrated that highest quality construction means low-cost pumping efficiency.

Modern, compact Motorpumps are available to deliver from 5 to 2800 gallons per minute and are made in sizes from 1/4 to 75 horsepower. Write today for complete catalog data.

9-823

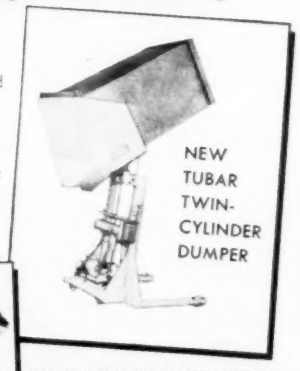


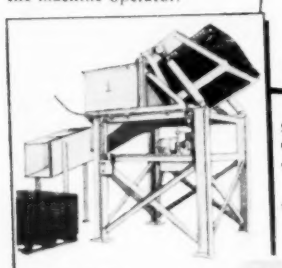
Ingersoll-Rand
11 Broadway, New York 4, N.Y.

For more details circle NED-137 E8 on enclosed inquiry slip

NOW...two powerful Tubar DUMPERS engineered to keep bulk handling costs down

Uhrden's new Tubar Dumper is especially designed for bulk chemical handling. Uhrden's Tubar Hi-Level Electro Hydraulic Dumper is the "Work Horse" of dumpers—designed to provide a continuous flow of work from boxes, crates, cases, and industrial containers to the machine operator.





STANDARD PRODUCTION MODELS . . . OR BUILT TO YOUR SPECIFICATIONS
- *Empty heavy containers fast . . . easily . . . safely*
- *Versatile . . . compact . . . easy to operate*

U-156-37B

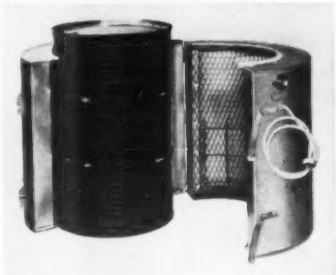
THE TUBAR
HI-LEVEL ELECTRO
HYDRAULIC DUMPER

Write for data on Uhrden's Complete Line of Tubar Dumpers

Tubar
DUMPER DIVISION
uhrden, inc.
DENNISON, OHIO
Tubar ASSURES QUALITY

For more details circle NED-138 E8 on enclosed inquiry slip

DRUM WARMERS
55-gal drum size is rated 4.4 kw



Palmer drum warmers are now offered in 4.4 kw as well as previous 3.2-kw rating for 55-gal drum sizes. Models have automatic temperature control in 100 to 450° or 60 to 250° F ranges. This makes the warmer a portable oven which can be taken to the point of use. Well insulated, hinged halves fit around the drum, with flexible top gasket allowing for variations in drum diameters. Made by **Harold L. Palmer Co.**, Dept. 48A, 28625 Grand River Ave., Farmington, Mich.

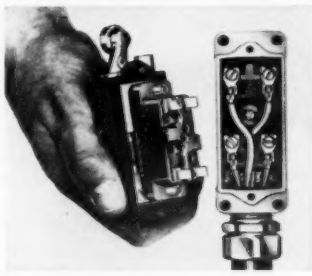
For more details circle NED-140 E8 on enclosed inquiry slip

THRUST WASHERS
made of moly-sulphide-filled nylon

High wear and abrasion resistance, low surface friction without lubrication, and minimum of chatter and noise are characteristics of Nylatron GS thrust washers, offered in a kit containing 18 sizes. Made of molybdenum disulphide-filled nylon, they have application in places where long wear under light thrust conditions is desired. Plastic box identifies each type and size. Thirty-nine sizes with 3/8 to 1-in. OD and 1/64, 1/32, and 1/16-in. thicknesses are available. Made by **Polymer Corp. of Pennsylvania**, 2140 Fairmont Ave., Reading, Pa.

For more details circle NED-141 E8 on enclosed inquiry slip

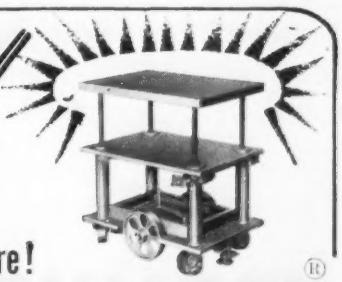
PLUG-IN LIMIT SWITCH
roller-arm mechanism is reversible



Wide flexibility of operation is afforded in this oil-tight plug-in limit switch by reversing the switch mechanism so that the roller arm actuator is at top or bottom. The base receptacle can be mounted on its base or on either side, with conduit opening top or bottom, and wired without disassembly. Switch requires 5-degree travel to operate and allows 25-degree overtravel. Graduated markings simplify actuator arm settings. Made by **Square D Co.**, 4045 N. Richards St., Milwaukee 12, Wis.

For more details circle NED-142 E8 on enclosed inquiry slip

NOW
More stamina, more versatile performance than ever before!



PORTELVATOR
The Handy HAMILTON Portable, Elevating Table

NEW convenience in maneuvering! Six wheel models roll easier . . . turn shorter.
NEW provision for increasing table area!
NEW provision for raising and lowering overhanging loads!
NEW overhanging conveyor tops!

NEW FREE LITERATURE illustrates and describes all! Write for Bulletin P-5606. Address, The Hamilton Tool Company, 901 Hanover Street, Hamilton, Ohio.

5606 IT'S A Hamilton Tool USE IT WITH CONFIDENCE

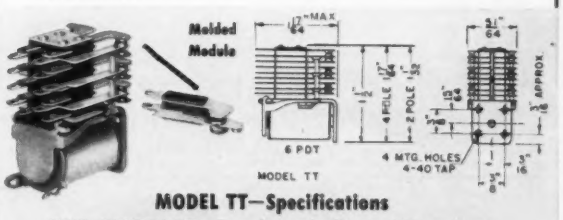
For more details circle NED-143 E8 on enclosed inquiry slip

TWO NEW OHMITE® RELAYS

with exclusive "Molded Module"* contact springs
exceptional sensitivity for small size
designed to meet aircraft, military, and industrial applications

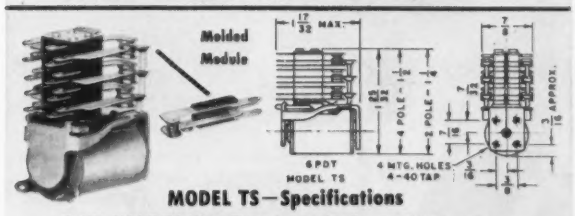
*Patent applied for

The new Models TT and TS relays incorporate several design innovations that make them ideal for aircraft and industrial applications at high ambient temperatures. Both relays are lightweight, yet rugged. Paramount among the design innovations is the revolutionary "Molded Module" contact spring construction. The "module" is a standard, single-pole, double-throw, spring combination molded into a single compact assembly. As many as six modules can be incorporated into a relay to provide a maximum six-pole, double-throw combination. With the springs rigidly held in a matrix of tough plastic, alignment of the springs is assured. More accurate alignment of all the subcombinations (modules) on the relay is possible, and adjustment of the individual contact springs is easier and more permanent. Diall Phthallate, the molding material, is capable of withstanding temperatures to 400°F. A wide variety of hermetically sealed enclosures is available.



MODEL TT—Specifications

COIL WATTAGE: Rated nominally at .150 watt per pole at an ambient temperature of 20°C.
COIL OPERATING VOLTAGE RANGE: To 115 VDC.
CONTACT RATINGS: Up to 5 amperes at 115 volts AC or 32 volts DC noninductive, with standard contact material, palladium. Other materials can be supplied.
CONTACT COMBINATIONS: Standard combinations are DPDT, 4PDT, and 6PDT (maximum). Others can be furnished. WT: Approx. 2 oz. for 4PDT relay.



MODEL TS—Specifications

COIL WATTAGE: Rated nominally at .250 watt per pole at an ambient temperature of 20°C.
COIL OPERATING VOLTAGE RANGE: To 115 VDC.
CONTACT RATINGS: Up to 10 amperes at 115 volts AC or 32 volts DC noninductive with standard contact material, silver-cadmium oxide. Other materials can be supplied.
CONTACT COMBINATIONS: Standard combinations are DPDT, 4PDT, and 6PDT (maximum). Others can be furnished. WT: Approx. 3 oz. for 4PDT relay.

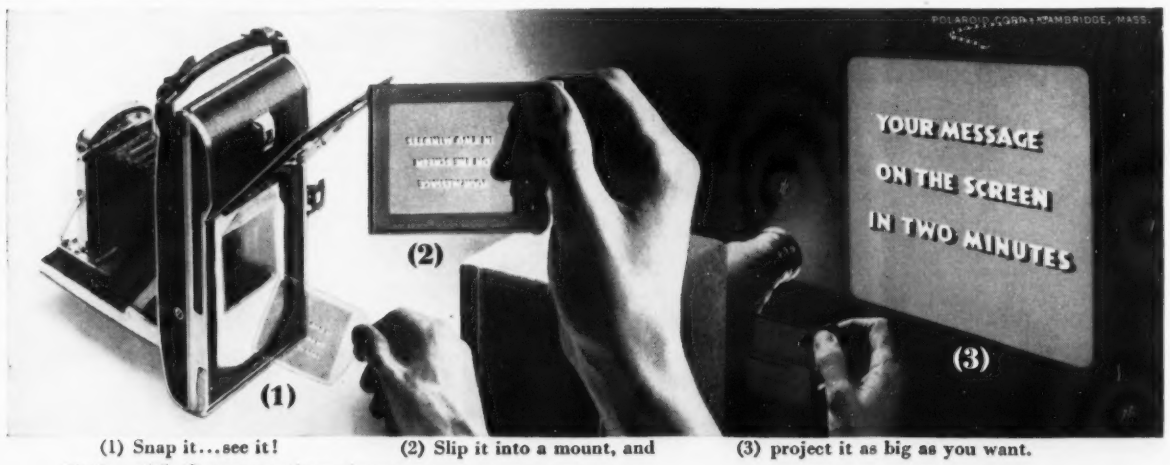
OHMITE® QUALITY Components

RHEOSTATS RESISTORS
RELAYS TAP SWITCHES
TANTALUM CAPACITORS
R. F. CHOKES
VARIABLE TRANSFORMERS

WRITE FOR BULLETIN 160

OHMITE MANUFACTURING COMPANY, 3620 Howard Street, Skokie, Illinois

For more details circle NED-144 E8 on enclosed inquiry slip



(1) Snap it...see it! (2) Slip it into a mount, and (3) project it as big as you want.

Polaroid Corporation Announces

QUICK, EASY WAY TO MAKE SLIDES

Polaroid Corporation has perfected a film which produces black-and-white slides right in a *regular* Polaroid® Land Camera. Just click the shutter and two minutes later you have a slide ready for projection.

The complete system includes the standard Polaroid Land Camera, the film, mounts, hardener and projector, plus a versatile Copymaker that lets you make slides from any text material, existing photographs, charts, graphs, titles or what-have-you. You have a choice of two sizes of film—2¼ x 2¼, or 3¼ x 4 (for existing "Lantern Slide" projectors). The quality of the film is remarkable—brilliant, grainless, and so sharp that projection to 12-foot screens shows no loss of detail. And it's extraordinarily fast (speaking photographically, now)—daylight speed of 1000 (ASA equivalent exposure index).

These slides cost about ½ as much as conventional slides. But the real saving is in the time and effort that it takes to put any picture on the screen.

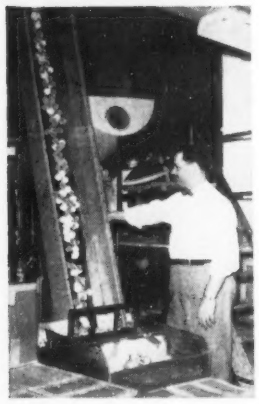
Send coupon for information, case histories.

Polaroid Corporation Dept. ED-5
Cambridge 39, Massachusetts
Please send me detailed information on the new Polaroid transparency system.

NAME _____
POSITION _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

For more details circle NED-139 E8 on enclosed inquiry slip

Convert belt conveyors to automatic magnetic conveyor-elevators with ERIEZ Magna-Rail units



At this R. T. French Company plant, an Eriez Magna-Rail *automagnetically* elevates and releases caps for mustard jars into a capping machine. Magna-Rail eliminated a hand operation which required elevating them to a platform and emptying them into the hopper.

Want to speed up production, and lower your operating costs? It's easy; convert your ordinary conveyors to magnetic conveyors by installing Eriez Magna-Rail units under your lines. These easy-to-install lifetime, permanent-powered magnets give a safe, positive hold to ferrous items such as nails, bolts, caps, cans, parts, scraps, etc. And they help reduce damaged parts . . . eliminate manual handling . . . prevent loading delays and manpower fatigue. Less floor space is needed for conveying lines and lines can move much faster . . . and as steep as 75 to 80 degrees. Used with other Eriez HI-POWR magnetic equipment, Magna-Rail units can readily be adapted to many phases of automation operations.

Eriez does not design, build or sell material handling systems, but serves people *who do* in areas where magnetic equipment should be incorporated. FOR BULLETIN write ERIEZ Mfg. Co., 80-E Magnet Dr., Erie, Pa.

ERIEZ HI-POWR MAGNETIC SEPARATORS

Magnetic SEPARATION AUTOMATION VIBRATION Equipment

For more details circle NED-145 E8 on enclosed inquiry slip

Strip-Coating Keeps Resharpened Tools SHARP

Sta-Warm dipping unit in packaging dept. of leading cutting tool manufacturer showing protective strip-coating being applied to new tools.

Tool manufacturers ship new drills, reamers, counterbores, hobs and dies to *you* well protected with plastic strip-coating. It's equally simple, fast and inexpensive for you to continue protecting tools after they have been used and resharpened. Do just what the tool manufacturers do . . . quick-dip cutting edges in fast drying plastic strip-coating compound.

Made especially for tool room use, model WV is inexpensive to buy, to use and to maintain. It melts strippable plastic to proper temperature *automatically* and maintains it at proper temperature *automatically.*

Choose large or small size to meet your requirements. It will pay for itself over and over in dependable tool protection.

Inquire now for catalog literature.

Sta-Warm ELECTRIC CO.
130 N. Chestnut St., Ravenna, Ohio
Subsidiary of ABRASIVE & METAL PRODUCTS CO.

For more details circle NED-146 E8 on enclosed inquiry slip

with precision, direct reading Hunter Mechanical Force Gages*—Series L type in 13 models for measuring load ranges from 0-500 grams to 0-30 pounds and Series D type in 5 models for measuring load ranges from 0-50 pounds to 0-200 pounds. Both types are accurate to better than 1% of full scale, can be provided with a "hold-at-maximum" indicator for registering maximum load, come complete with six attachments and wood carrying case. Thousands are now in use in laboratories, inspection departments, on production lines, and in the field. Send for Bulletin 750c containing full details including prices.

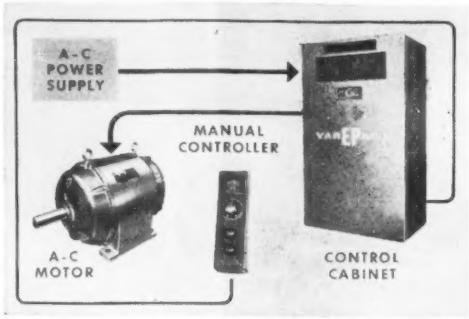
*The "Force Gage" of many test standards.

HUNTER SPRING COMPANY
14 Spring Avenue, Lansdale, Pennsylvania

For more details circle NED-147 E8 on enclosed inquiry slip

ADJUSTABLE SPEED DRIVE offered in 1 to 50-hp ratings and in any required torque

Once selected, speed of the VarEPack adjustable speed drive remains constant, regardless of load fluctuations or temperature changes in the equipment. Speed is



made with manual or automatic remote control. The compact unit provides control of acceleration and deceleration; reversing; an infinite range of stepless speeds; and jogging, inching, and creeping.

Any required torque is provided at guaranteed speed regulation within its rating. Short-period torque of 200 to 300 per cent of rating is available. Drive is fail-safe in operation.

Induction motor, control station, and a control cabinet comprise the drive. Units are available in ratings of 1 to 50 hp, with maximum speeds of 3400, 1700, 1130 rpm, or less. Standard drives are 208/220/440 or 550 v, three-phase, 60 cycles, but two-phase and 50-cycle drives can be supplied. Made by **Electric Products Co.**, 1724 Clarkstone Rd., Cleveland 12, Ohio.

For more details circle NED-148 E8 on enclosed inquiry slip

WOOD FINISHING MACHINE eliminates hand sanding and sealing

Smooth, glossy, mar-resistant finish is given to any type of wood at a rate of 90 to 120 lineal fpm by a machine using the Super Microseal technique. Process uses pressure and friction to create heat which melts lignin, a natural plastic in the wood's surface. This is blended with a Reichhold Chemicals, Inc. synthetic resin to form a dense, water and spot-resistant surface about 1/24 in. deep which becomes a part of the wood. The wood surface can be stained during the process. Elimination of hand sanding and sealing operations reduces the cost of finishing doors, furniture parts, architectural panels, and other wood parts. Machine will be licensed to wood products manufacturers by its developer, **Satin Surfaces, Inc.**, 3131 W. Market, Louisville, Ky.

For more details circle NED-149 E8 on enclosed inquiry slip

New Beryllium Copper ROLLPIN

Now . . . extend the proved advantages of Rollpin to a wide variety of applications where resistance to corrosion, good electrical properties and nonsparking or nonmagnetic characteristics are required.

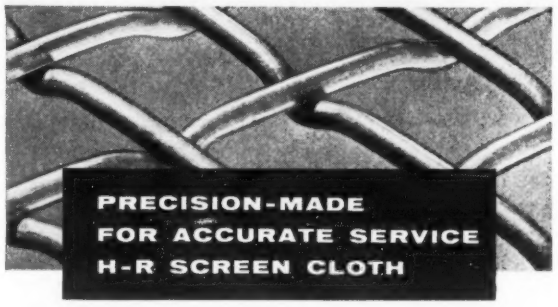
Use it as you use carbon steel Rollpins—to replace taper pins, straight pins and set screws; to serve as a rivet, dowel, hinge pin or stop pin—to cut production costs by eliminating special machining, tapping, and the need for hole reaming or precision tolerances. Driven into a hole drilled to normal production standards, Rollpin locks securely in place, yet can be readily drifted out and reused whenever necessary. Beryllium Copper Rollpins are available from .062"-diameter to .250".

For all the information you need, write **Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, New Jersey**, Dept. R-36-537.

ROLLPIN TRADEMARK

ESNA ELASTIC STOP NUT CORPORATION OF AMERICA

For more details circle NED-150 E8 on enclosed inquiry slip



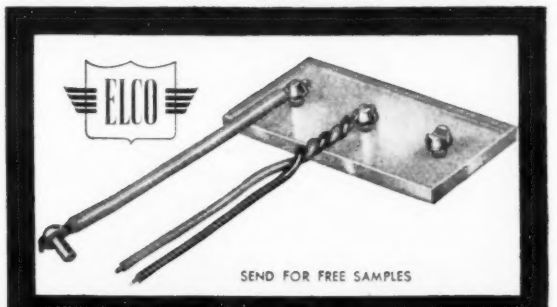
Problem: Inaccurate sizing, blinding, poor output, frequent replacement. Solution: Hewitt-Robins screen cloth made in all popular weaves specifically designed to meet problems on any make of vibrating machinery, of accurate sizing, scalping, flow resistance, tonnage capacity, heavy materials sizing, moisture conditions, plugging or blinding, and others.

Oil tempered Super-Gyraloy, by far the hardest and most abrasion resistant screen cloth wire your money can buy; tough, resilient, spring steel Gyraloy for less excessive abrasion resistance; Super-Gyraloy enamel coated screen cloth for conditions where moisture is a problem; or screen cloths for extraordinary conditions made of steel, brass, stainless steel, phosphor-bronze, monel metal, and other ductile metals, are all available. A wide range of wire and opening sizes permits choice of a screen cloth precision made for your application. To find out how H-R products and services can help you, consult your classified telephone directory for the nearest H-R representative, or contact Hewitt-Robins, Stamford, Connecticut. To obtain your copy of screen cloth bulletin No. 113-A1, write to Hewitt-Robins, Stamford, Connecticut.

HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

For more details circle NED-151 E8 on enclosed inquiry slip



SOLDERLESS ELECTRICAL TERMINALS

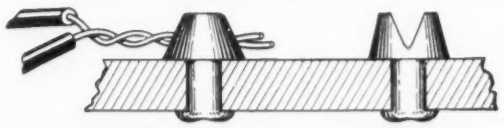
RIVET TYPE

SCREW TYPE

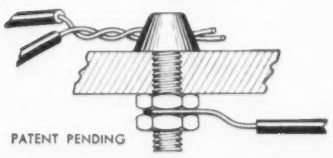
When the jaws of this solid copper vee-slot terminal are squeezed, pressed, swedged, or hammered together, the wire is permanently clamped in a vise-tight grip that affords maximum contact for full current flow. Standard sizes are available in either screw or rivet types.

SQUEEZES CLOSED HOLDS WIRE TIGHT

Closure is accomplished rapidly and accurately on the production line by the use of simple power press tools. Engineering drawings for the tool design will be furnished by Elco on request. For hand work, a die and anvil can be attached to the faces of parallel pliers. For single applications, the jaws of the terminal can just be hammered together, or peened over.



APPLICATIONS OF RIVET AND SCREW TYPES



Since this is a new product with many advantages and features, the extent of possible applications and the range of benefits and savings have yet to be fully explored. We invite you to . . .

WRITE FOR INFORMATION

. . . so that we may have an opportunity to work up applications for you. Our Engineering Department is at your service, ready to help in any way they can.

ELCO SCREWS

ELCO TOOL AND SCREW CORPORATION
1946 BROADWAY
ROCKFORD, ILLINOIS

For more details circle NED-152 E8 on enclosed inquiry slip

CYCLONE SEPARATION

FOR MORE EFFICIENT DUST COLLECTION —FILTERS LAST LONGER

Almost all industrial dusts can be collected more efficiently by Dustkop. Thirty-seven standard models *ready to use!* Reduce installation costs — save space. Write for descriptive literature.

DUSTKOP STOPS DUST

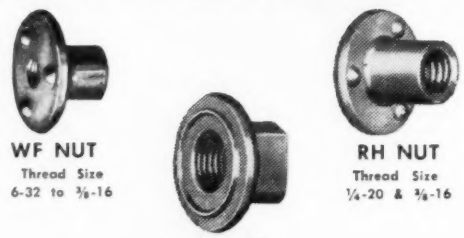
ALSO A COMPLETE LINE OF MIST COLLECTORS

AGET MANUFACTURING COMPANY
1396 EAST CHURCH ST., ADRIAN, MICH.

▲ For more details circle NED-153 E8 on enclosed inquiry slip ▲

OHIO RESISTANCE WELDING FASTENERS

THE PRIMARY FASTENERS IN FASTENER ASSEMBLIES



WF NUT
Thread Size
6-32 to 3/8-16

SF NUT
Thread Size
5/16-18 to 1/2-13

RH NUT
Thread Size
1/4-20 & 3/8-16

OHIO flanged weld nuts provide extra-long thread engagement and are ideal for assemblies requiring strong primary fasteners. They can also serve as spacers or bearing surfaces where required.

OVER 50 YEARS OF BETTER FASTENING

Samples and information available upon request

THE OHIO NUT & BOLT CO.
14 First Avenue • Berea, Ohio

▲ For more details circle NED-154 E8 on enclosed inquiry slip ▲

FOR MAXIMUM CAPACITY IN MINIMUM SPACE . . .

THE VERSA MANIFOLD MOUNT VALVE

The Versa Manifold Valve has been especially designed for use where space is at a premium.

All piping can be installed, connected to manifold plate and even purged before installation of the valve itself. The valve is then simply bolted into place on the manifold plate. The valve proper, being independent of the piping, can be easily removed for service or replacement without disconnecting piping or disassembling the valve.

Versa Control Valves are available with any type of actuating device in sizes from 1/8" to 1" NPT, in 2-, 3-, 4-, and 5-way, type, and for pressures from partial vacuum to 500 PSIG.

All Versa Valves are triple pressure and functionally tested under water for guaranteed leakprootness.

Over 110,000 Variations . . . Ready for Immediate Delivery!

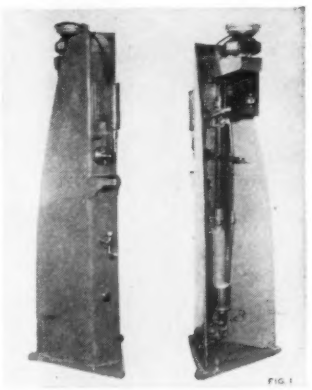
VERSA

VERSA PRODUCTS COMPANY INC.
249-A SCHOLES STREET
BROOKLYN 6, N. Y.

Write today for your free copy of Versa's Catalog #14.

▲ For more details circle NED-155 E8 on enclosed inquiry slip ▲

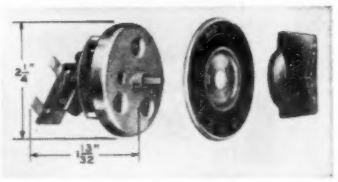
STUD DRIVING UNITS
fix studs in die castings



Grouping of several Studrive units about a single fixture forms a machine capable of automatically driving as many as eight studs in blind holes in a casting in less than 1 sec. Units can be regrouped to handle a different casting when a production run is completed. Machine uses the stud as its own tap, driving it into precast, unthreaded holes. The stud is forced into the casting hole in timed relation to its rotation. Placement can be within 2-in. centers. Each unit has a triangular cross-section which allows close grouping of the units. Driving power is furnished by an 80-psi air line. Made by **Studrive, Inc.**, 2704 E. Larned, Detroit, Mich.

▲ For more details circle NED-156 E8 on enclosed inquiry slip ▲

TIME SWITCH
also serves as an on-off switch



"Hold" feature incorporated in the 41,000 Series Mark-Time spring-actuated switch gives it a dual function: By turning the knob to the left it becomes a snap or on-off switch; use as a time switch is by turning the knob to the right. Switch can have a bell which sounds at the end of a preset time period. Switch is rated 15 amp, 125 v ac. Stationary male terminals for solderless connectors are provided. Made by **M. H. Rhodes, Inc.**, 28 Bartholomew Ave., Hartford 6, Conn.

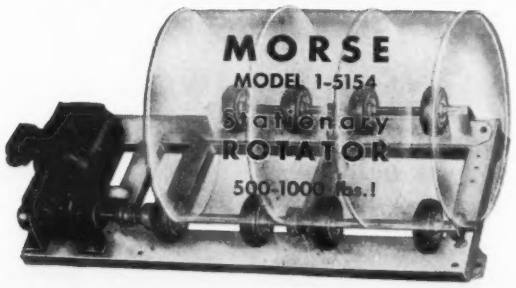
▲ For more details circle NED-157 E8 on enclosed inquiry slip ▲

SCREWDRIVER SET
has three screw-holding drivers

Quick Wedge screw-holding screwdriver, offered in a three-model gift package, holds, starts, and drives the screw. Blades are made of spring steel, and handles are of shock-proof, fireproof, unbreakable Tenite II. Screw-holding feature facilitates insertion of screws into hard - to - reach places. Package sells for $3.98. Made by **Kedman Co.**, Dept. NED, 233 S. Fifth West, Salt Lake City 1, Utah.

▲ For more details circle NED-158 E8 on enclosed inquiry slip ▲

HEAVY DRUM ROTATING



Cuts Costs . . . Fast . . . Safe

You can now mix, blend or tumble loads up to 1000 lbs. with the new MORSE Model 1-5154 Stationary ROTATOR. It is primarily engineered for heavy loads in 30 to 55 gallon drums yet lesser loads can be rotated with equal efficiency. Any diameter drum can be mounted by adjusting only three bolts.

The rugged ½ H.P. motor can be geared to give any fixed speed from 5 to 30 RPM. Six inch drive wheels (4) and idler wheels (4) have Neoprene treads for smooth, non-slip revolving. Drive shaft, idler shaft and all welded steel frame are extra rugged construction for long-lasting, trouble free operation.

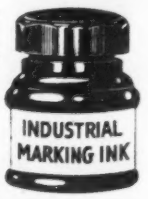
A double drum model No. 2-5154 with a 2000 lb. capacity is also available. Write today for brochure on complete Morse line.

MORSE MANUFACTURING CO. INC.
756 West Manlius St. East Syracuse, N. Y.

▲ For more details circle NED-159 E8 on enclosed inquiry slip ▲

CLEAR PRINT

industrial inks



ENGINEERED TO SOLVE ALL YOUR MARKING PROBLEMS

FOR USE WITH:
Rubber Stamps
Code Marking-Machines
Stencil, Pen, Brush

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one! Clear, sharp, fast drying impressions everytime!

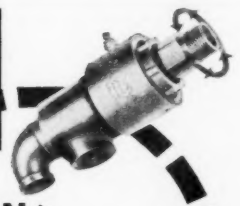
★ Quick Laboratory Service ... on your problem markings.
★ To Permanently Mark metals, plastics, glass, wood paper, leather, ceramics.

For Complete Information Phone BAker 5-8201 or write:

PHILLIPS PROCESS CO. INC.
58 COMMERCIAL STREET
ROCHESTER 14, N. Y.

▲ For more details circle NED-160 E8 on enclosed inquiry slip ▲

No Mechanical Maintenance



ROTARY UNION*

This precision mechanical rotating seal gives you thousands of hours of smooth, leakproof sealing without mechanical maintenance of any kind. It is self-adjusting to pressure and self-aligning to strain. Ball bearing construction assures perfect sealing at high speeds with extremely lower power consumption. There is a Rotary Union for every heating and cooling application—through a complete range of pressures, temperatures, and speeds, in pipe sizes from ¼" through 5". Ask for Bulletin 700.

*Trade Name—Patented

"WHERE *Good Connections* COUNT®"

PERFECTING SERVICE CO.
332 Atando Ave. Charlotte, N. C.
Baltimore—Buffalo—Camden, N. J.—Chicago—Cleveland—Los Angeles
New York—Providence—Hamilton, Ont.—Montreal—Toronto

▲ For more details circle NED-161 E8 on enclosed inquiry slip ▲

Pointed blade seals tops of cartons!

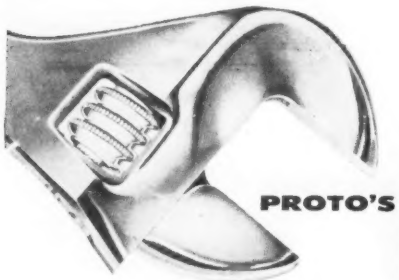
New Bostitch P6-8P Stapling Plier top-seals almost any cardboard or corrugated container including those half-filled or loosely packed.

No pressure or special bolstering needed. Just insert sharp blade into top edge of carton and squeeze. A rugged staple clinches inside, leaving only a thin slit where the blade went in.

For free demonstration call "Bostitch" in your local phone directory or write Bostitch, 635 Briggs Drive, East Greenwich, R. I.

Fasten it better and faster with BOSTITCH® STAPLERS AND STAPLES

▲ For more details circle NED-162 E8 on enclosed inquiry slip ▲



NEW!

PROTO'S CLIK-STOP ADJUSTABLE WRENCHES

PAT. PEND.

GOLDEN KNURL HOLDS EXACT JAW OPENINGS AUTOMATICALLY!

NO BUTTONS...NO LEVERS...NO GADGETS

Use it like an ordinary "adjustable." Merely turn Golden Knurl, jaws click automatically into desired opening... even non-standard and foreign sizes. Jaws won't work loose. Drop-forged, fine Protoloy steel. Thin head for tight places. Highly polished, chrome plated. Job tested and approved by mechanics, coast to coast. Try the Clik-Stop now!

Federal Specifications: GGG-W-631A, Type I

Available in FIVE popular sizes

704L	706L	708L	710L	712L
4"	6"	8"	10"	& 12"

ANOTHER REASON YOU'LL PREFER PROTO PROFESSIONAL WRENCHES

PROTO TOOLS — PROTO means PROfessional TOols

PENDLETON DIVISION OF TOOL INDUSTRIES INC.

2209 Santa Fe Ave.
Los Angeles 54, Calif.

For more details circle **NED-165 E8** on enclosed inquiry slip

NEW!

READY-POWER "BANTAM" GAS-ELECTRIC POWER UNITS

FOR MOTORIZED WALKIE AND SMALL RIDER TRUCKS

The new Model W is the most compact, most dependable power generating unit ever built for small trucks. Combining new performance and versatility, the *Bantam* features new 12-volt automotive starting and ignition system, complete choice of idling speed. It fits practically every make in the small electric truck field. Removable cover and end plate provide complete access for servicing engine and generator. Write for information.

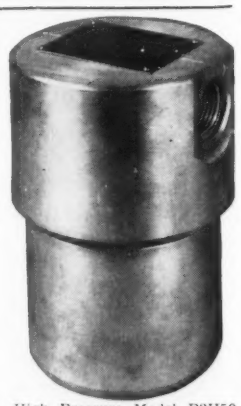
READY-POWER

The READY-POWER Co., 3832 GRAND RIVER AVE., DETROIT 8, MICH.

Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

For more details circle **NED-166 E8** on enclosed inquiry slip

to keep hydraulic valves free and functioning properly . . . . .

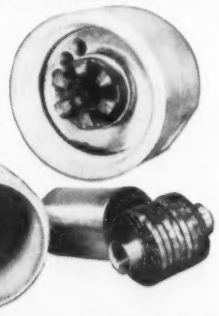


FERRO FILTER®

MAGNETIC SEPARATORS

remove microscopic steel particles resulting from abrasion and wear of moving parts; steel burrs and other ferrous particles. FERROFILTERS help prevent sticking and nonfunctioning of valves, pistons and other precision parts.

High Pressure Model P2H50 for service to 5000 psi. Others for low pressure rated from 100 psi.



S. G. FRANTZ CO., Inc.

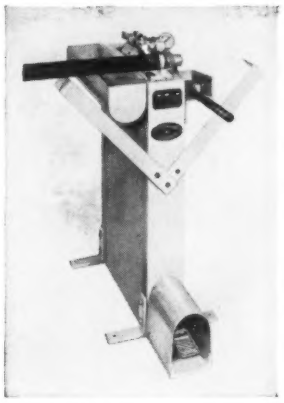
Brunswick Pike & Kline Ave.

P. O. Box 1138 Trenton 6, N. J.

Write for BULLETIN PM-56

For more details circle **NED-167 E8** on enclosed inquiry slip

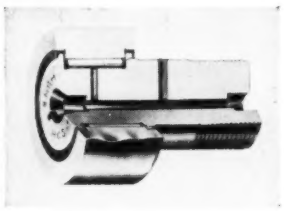
HOSE CLAMPING MACHINE
makes permanent, leakproof joint



Preselected air pressure which actuates the Model TA-1 Tension-Air hose clamping machine makes possible uniform clamping of industrial hose with Punch-Lok hose clamps. Operation consists of placing the hose and clamp in the machine and stepping on a pedal. A single mallet blow locks the clamp to make a permanent, leakproof, and snag-free connection. Machine also has a clamp remover. Made by **Punch-Lok Co.**, 323 N. Justine St., Chicago 7, Ill.

For more details circle **NED-168 E8** on enclosed inquiry slip

CAM FOLLOWERS
sealed to exclude dirt

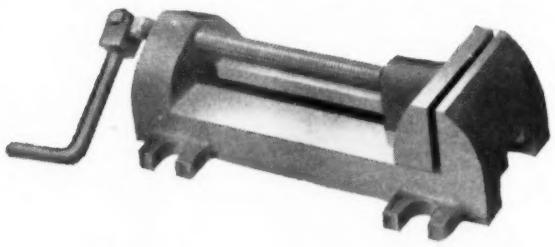


Made with no dimensional change from standard, these nylon-sealed cam followers eliminate a common cause of bearing failure and wear—the infiltration of dust, powder, or other abrasives. The heavy duty Type HCS shown is one offering in this line of minimum-friction units. Made by **Smith Bearing Co.**, Box 1119, Station D, Trenton, N. J.

For more details circle **NED-169 E8** on enclosed inquiry slip

DRILL PRESS VISE
4-in. wide jaws open to 7 in.

Most types of drill press work and similar operations can be performed in the X4V drill press vise, made with a gray iron main body and jaw and threaded



steel screw. Its swivel handle swings out of the way. Vise has four hold-down feet. Jaws are 4 in. wide, 2 in. deep and open to 7 in. Price is $9.80. Made by **Alva Allen Industries**, Machine Tool Div., Dept. NED, 1001-1015 N. Third St., Clinton, Mo.

For more details circle **NED-170 E8** on enclosed inquiry slip

The BECO Super Lift LEVER DOLLY

- Why Pay More!
- Guaranteed
- Stronger
- Safer

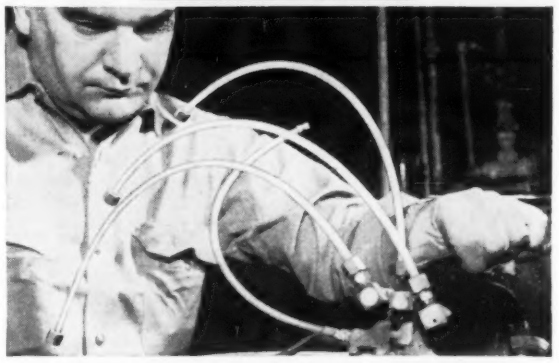
- For immediate shipment, wire phone, or pin this ad to your letterhead and mail to:

BECO - Bettendorf, Iowa

Four Models ● Metal or Rubber Wheels

For more details circle **NED-171 E8** on enclosed inquiry slip

PRESSURE **NYLAFLOW®** TUBING



High-strength, flexible Nylaflow simplifies installation problems

No other tubing material offers the same combination of desirable properties for oil and lubrication lines, air lines, food and beverage lines, vacuum lines, etc.

Nylaflow Pressure Tubing is different. It's made from a tough, horn-like polyamide, with these superior advantages:

• Almost Unlimited Flex Life • High Strength • Crush Resistant • Corrosion Resistant • Low Installation Cost • Permanent Forming

Nylaflow is available in short-time burst pressures of 1000 psi and 2500 psi and in various sizes and lengths. Write for data or help with your tubing problem.

THE POLYMER CORPORATION OF PENNA. • Reading, Pennsylvania
Export: Polypenco, Inc., Reading, Penna., U.S.A.

POLYPENCO **Nylon, Teflon*, Q-200.5 (cross-linked polystyrene) and K-51 (chlorinated polymer)** *DU PONT TRADEMARK

For more details circle **NED-172 E8** on enclosed inquiry slip

SPROCKETS and CHAIN in the full range required for drives from 1/4" to 2" Pitch

FROM STOCK!

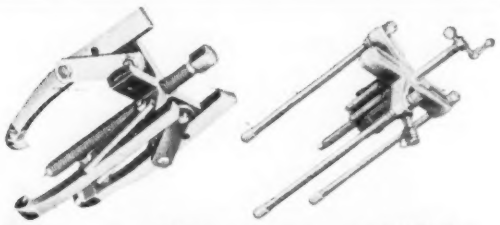
BOSTON Gear. adds NEW types and sizes

Now you can meet any drive need — light to heavy duty—with standardized chain and sprockets OFF-THE-SHELF from your BOSTON Gear Distributor — AT FACTORY PRICES.

NEW Catalog SC-3 lists the new types and sizes, and all other BOSTON Gear roller, block, and ladder chain and sprockets. Call your Distributor, or write: Boston Gear Works, 69 Hayward St., Quincy 71, Mass.

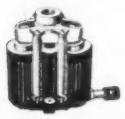
CALL YOUR BOSTON® Gear DISTRIBUTOR

For more details circle **NED-173 E8** on enclosed inquiry slip



New pulling versatility with 2-way 3-way pullers

By merely shifting the legs on a single puller head, you get either a 2-way or a 3-way application—actually two pullers in one! Gears, sprockets, bearings and other pulling jobs go fast . . with no damage or distortion to parts. Operate manually or with OTC hydraulic rams.



"Center-Hole" Rams Available in 17½, 30, 50, 100-ton capacities.

Hydraulic Pumps Wide range of hand-operated and elecrically driven.

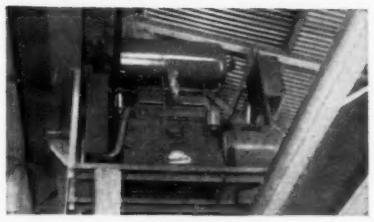
OTC Shop Presses Sizes from 17½-ton bench-type to 100-ton roll-bed.

Hydraulic pulling is our specialty. Write for FREE information.

OWATONNA TOOL CO.
436 CEDAR ST., OWATONNA, MINNESOTA

For more details circle NED-174 E8 on enclosed inquiry slip

COMPACT



Schramm Compressors Save Space

You can install Schramm Compressors *anywhere*—in minimum space—at low cost. Compact design with integral cooling system saves space every time. And you need no expensive foundations or long and costly air lines. Take advantage of unused corners for your installation. Put the compressor right on the job.

For complete information, write for Catalogs GC-57 and 5510, or see your nearest Schramm Dealer.

Schramm, Inc.
MANUFACTURERS OF AIR COMPRESSORS
700 North Garfield Ave. • West Chester, Pa.

COMPACT

For more details circle NED-175 E8 on enclosed inquiry slip

RERATED AC MOTORS are lighter and more compact

Built to NEMA Rerate specifications, line of alternating - current motors are lighter in weight and occupy less space than previous models of comparable horsepower. For example, the standard frame, 1-hp, 1800-rpm, open dripproof, squirrel-cage motor weighs about 74 lb, whereas rerated unit with the same characteristics weighs about 65 lb. Output, however, is the same. Temperature rise remains 40° C. Rerated open dripproof motors are available presently, although other types will be offered. Made by **Brook Motor Corp.**, 3551 W. Peterson Ave., Chicago 45, Ill.

For more details circle NED-177 E8 on enclosed inquiry slip

CORRUGATED PAPER CUTTER razor operates both ways

Corrugated, roofing, building, and other papers of this nature available in rolls can be cut with the Razor-X cutter. Razor mechanism operates both ways. Unit is portable, but can be bolted to a work bench. All-steel construction and baked-on enamel finish are featured. Cutter finds typical application in packaging and wrapping departments. Made by **E. O. Bulman Mfg. Co.**, 1652 McReynolds Ave. N. W., Grand Rapids 4, Mich.

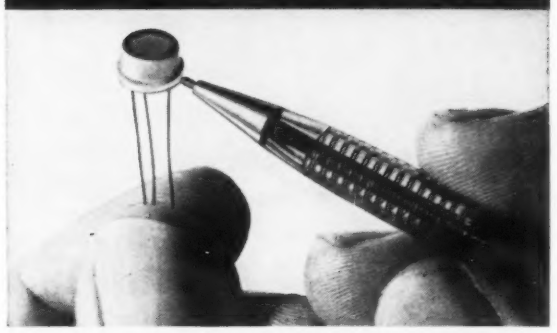
For more details circle NED-178 E8 on enclosed inquiry slip

AIR & HYDRAULIC CYLINDERS heavy duty, 1½ to 8-in. sizes

Pressure ratings of 200 psi (air) and 1000 psi (hydraulic) suit this line of heavy duty cylinders for machine tool, press, transfer machine, conveyor, and various automation uses. They are offered in nine sizes in flange (blind end), flange (rod end), clevis, adjustable trunnion, and foot mounting styles. Bore sizes range from 1½ to 8 in., and strokes are to specification. All models are available noncushioned, cushioned blind end, cushioned rod end, or cushioned both ends. Cushion check and adjustment can be interchanged without modification. Large ports provide fast operation. Alternate port positions are available. Piston and cartridge-retained rod seals will operate from −20 to 150° F. Seals for higher or lower temperatures are optional. Made by **S-P Mfg. Corp.**, Dept. N, 30201 Aurora Rd., Solon, Ohio.

For more details circle NED-179 E8 on enclosed inquiry slip

FREE ANALYSIS OF YOUR SMALL METAL PARTS JOINING PROBLEMS



Hermetic Seal Welded Without Heating Component!

PROBLEM: weld transistor cap to base, make a hermetic seal without heating internal temperature-critical parts.

SOLUTION: A Raytheon Welding Analyst recommended a DC, (stored energy) welding system, using only 6.6 kva compared to the 75-100 kva required for an AC welder to do the same job.

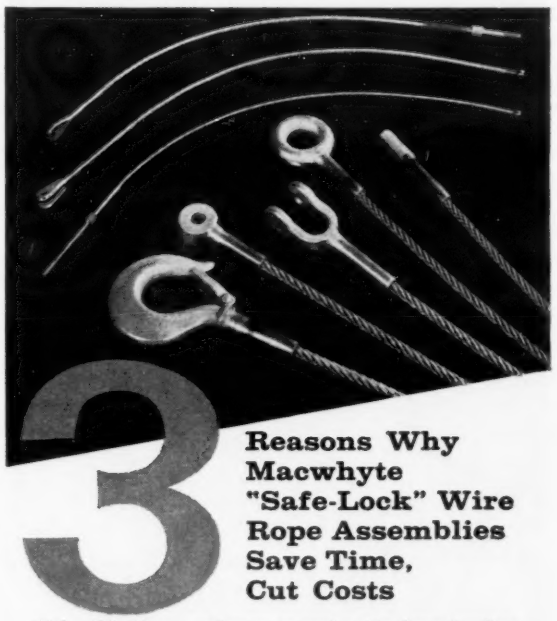
RESULT: 1500 perfectly uniform welds per hour; no damage from heat.

HOW YOU CAN BENEFIT—
If you have a small metal parts joining problem, see your Raytheon Welding Analyst. Write Dept. NT5—without obligation.

RAYTHEON

RAYTHEON MANUFACTURING COMPANY
Commercial Equipment Division, Industrial Products Dept., Waltham, Mass.

For more details circle NED-180 E8 on enclosed inquiry slip



3 Reasons Why Macwhyte "Safe-Lock" Wire Rope Assemblies Save Time, Cut Costs

Take this time- and money-saving tip from leading manufacturers: Use Macwhyte PREfabricated "Safe-Lock" Wire Rope Assemblies in your equipment. Specifically, here's why:

1 You save time and cut costs because assemblies arrive ready-made for fast, easy installation. Assemblies are precision-made to your specifications in any length and with the strength and flexibility you need—with swaged terminals at one or both ends.

2 Macwhyte assemblies last longer — protect the good name of your equipment. They are made PREformed to shrug off strain, abrasion, and shock. Ropes are Bright Steel, Galvanized, or Stainless Steel, Monel Metal, or Plastic Coated to resist moisture and corrosion. Swaged terminals have the same holding power as the wire rope itself.

3 Macwhyte service cuts delivery and production delays — enables you to pre-determine costs. Many standard types are catalogued for fast delivery. You get prompt service on specials.

Why slow down your production with costly hand-made ill-fitting assemblies? Macwhyte can supply the exact standard or special "Safe-Lock" Wire Rope Assembly you need — fast and at lower cost! Write for catalog No. 5601. Do it today!

MACWHYTE Wire Rope COMPANY
2906 Fourteenth Avenue, Kenosha, Wisconsin

MILL DEPOTS: **New York 4,** 35 Water St. • **Pittsburgh 36,** P. O. Box 10916, 353 Curry Hollow Road • **Detroit 3,** 75 Oakman Blvd. • **Chicago 6,** 228 S. Desplaines St. **St. Paul 14,** 2356 Hampden Ave. • **Ft. Worth 1,** P. O. Box 605 • **Portland 9,** 1603 N. W. 14th Ave. • **Seattle 4,** 87 Holgate St. • **San Francisco 7,** 188 King St. • **Los Angeles 21,** 2035 Sacramento St.

For more details circle NED-181 E8 on enclosed inquiry slip

YALE introduces the INDUSTRIAL tractor shovel DESIGNED TO GIVE YOU 25% MORE WORK EVERY HOUR

For a demonstration in your plant or for further information write The Yale & Towne Manufacturing Co., Dept. A-375, Philadelphia 15, Pa.

through these exclusive Yale features

- Dual brake and inching control pedals
- Yale Torque Transmission (fully automatic)
- Front and rear operating lights
- 45° ground-level bucket tipback
- 6 foot dumping clearance
- Accelerates to an operating speed of 8 mph. in 3.5 seconds—and to a top speed of 13 mph. in 5.5 seconds
- Safety-curve arms
- Sealed brakes

a product of Yale integrated design—engineering advances are standard features...

- Gasoline; LP-Gas Powered
- Sealed hydraulic system—keeps dirt out
- Dual air cleaners
- Carrying capacity of 2500 lbs.—bigger load capacity
- Extra strong heavy welded steel frame—greater safety, longer life
- Short wheel base—minimum turning radius
- Sealed generator and dust-proof distributor
- Balanced weight distribution
- Maximum speeds up to 13 mph.
- Automatic bucket return to dig position

YALE*
*REG. U. S. PAT. OFF.

INDUSTRIAL LIFT TRUCKS & TRACTOR SHOVELS • HOISTS

For more details circle NED-176 E8 on enclosed inquiry slip

HANSEN ONE-HAND TACKERS

1ST ON THE MARKET . . . STILL 1ST CHOICE!

FOR EVERY TACKING JOB
Decorations
Displays
Insulation
Screens
Shelving
. . . many, many others

Everywhere you look, you'll find Hansen Tackers on the job, helping to cut fastening costs with their speed, economy, efficiency. Always insist on genuine Hansen Tackers—36 models and 80 staple sizes—for the finest in tackers . . . anywhere!

SEND for free booklet today!

A. L. HANSEN MFG. CO.
5164 Ravenswood Avenue • Chicago 40, Illinois

▲ For more details circle NED-188 E8 on enclosed inquiry slip ▲

POWDER-ACTUATED DRIVER
drives studs in concrete or steel

Easily inserted interchangeable barrels enable the Model BH-1 Green Hornet powder-actuated tool to set either 1/4 or 3/8-in. studs with the same driver. The threaded or headed studs are driven into concrete or steel with energy created by a blank cartridge discharge. Trigger-actuated tool is contoured to the hand and is rapidly loaded as shown in top picture. A half-turn of the breech readies the tool for firing (bottom photo). Made by **Velocity Power Tool Co.**, 203 N. Braddock Ave., Pittsburgh 8, Pa.

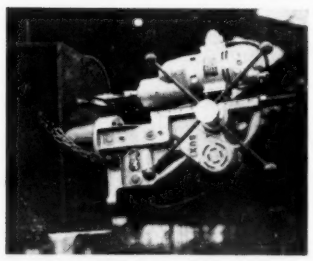
▲ For more details circle NED-190 E8 on enclosed inquiry slip ▲

PORTABLE LIFT
lifts 2000 lb

Materials handling and maintenance operations are applications for the Hartman Booster, a portable lift formerly made by Oster Mfg. Co. It has a load capacity of 500 to 2000 lb. Maximum lift height is 112 in. Made by **Hartman Metal Fabricators, Inc.**, Dept. 7, 133 Murray St., Rochester 3, N. Y.

▲ For more details circle NED-191 E8 on enclosed inquiry slip ▲

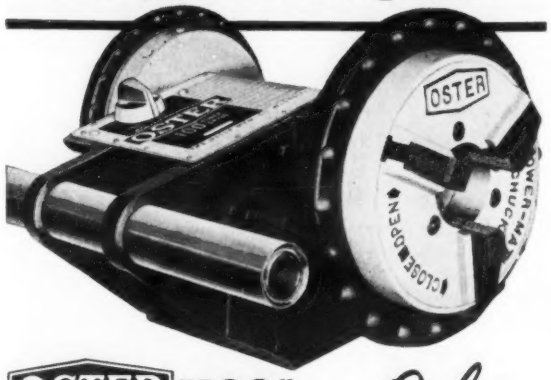
MAGNETIC DRILL PRESS
has automatic power feed



Operator fatigue is eliminated and drill bit life is increased by incorporation of an automatic power feed in the Bux-Matic portable magnetic drill press. The positive feed, two-speed unit is only slightly larger than the manually-operated Model L-3. It takes all makes and sizes of air and electric portable drills and is capable of drilling up to 1 3/4-in. holes in any position—on walls, overhead, or horizontal. A 6-ft safety chain for overhead operation and a twist-lock plug are included. Made by **Buck Mfg. Co.**, Dept. 1, 1355 N. Tenth St., San Jose, Calif.

▲ For more details circle NED-192 E8 on enclosed inquiry slip ▲

NEW POWER VISE
cuts pipe-threading costs



OSTER "100"
PUTS POWER IN HAND PIPE TOOLS
1. Weighs only 77 lbs.
2. Full 2" standard range.
3. New "POWER-MATIC" front chuck.
4. Self-Centering rear chuck.

Only $199.50
Complete, as shown

See your Oster Distributor, or write today for complete information and specifications.

THE OSTER MANUFACTURING CO.
1311 East 289th Street, Wickliffe, Ohio

▲ For more details circle NED-194 E8 on enclosed inquiry slip ▲

NEW

MARTINDALE
PRODUCTION, MAINTENANCE and SAFETY EQUIPMENT
CATALOG 31

Includes
SAWS
1/4" to 4" diameter. High speed steel and tungsten carbide.

MARTINDALE
ELECTRIC COMPANY
1387 HIRD AVE. CLEVELAND 7, OHIO

SEND FOR NEW 64-PAGE CATALOG

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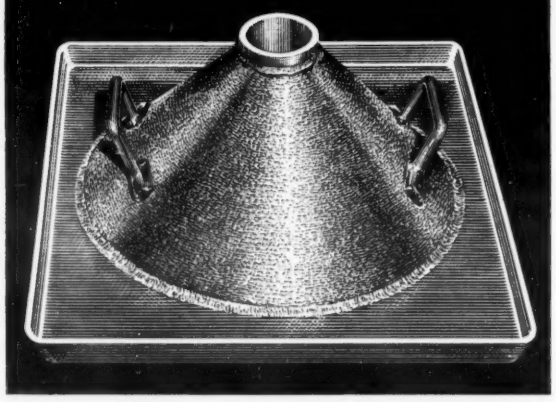
We'll make it from
ALUMINUM!



36"

CRANE OUTRIGGER SUPPORT

JAMMED UP? Alcoa's Jobbing Division can shake you loose, on complicated or long-run jobs in fabricated aluminum. Complete engineering-fabricating facilities, backed by the world's largest research organization. Also many standard products: shipping drums, vessels, tote boxes, pallets, phone booths, farm gates, electronic cabinets, process equipment, welded tubes, tanks.

SEND FOR FREE BOOK TODAY

Fully illustrated 16-page booklet describes in detail Alcoa's unmatched facilities for welding, rolling, brake forming, bending, spinning, finishing, testing, complete engineering-fabricating services.

ALCOA ALUMINUM
Your Guide to the Best in Aluminum Value

"ALCOA THEATRE"
Exciting Adventure
Alternate Monday Evenings

ALUMINUM COMPANY OF AMERICA
1951-E Alcoa Building, Pittsburgh 19, Pennsylvania

Please send my free copy of
Alcoa Aluminum Fabricating Facilities.

NAME _____ TITLE _____
COMPANY _____
STREET ADDRESS _____
CITY _____ STATE _____

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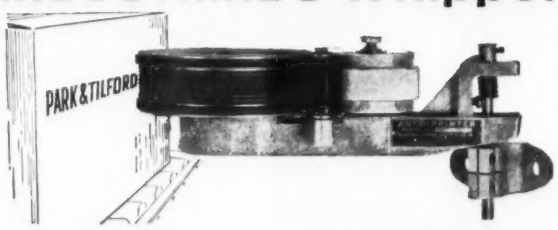
NO. 1 SPECIALIST
IN THE MARKING FIELD
INDUSTRIAL'S Whippet



What Makes it First?... LOOK:

Versatility . . . automatically imprints cartons, bags, rolls, cans, containers and packages — as you need them during production line runs.
Low cost . . . "Whippet" sells low, seldom requires attention or maintenance.
Capacity . . . works non-stop at production lines speeds. No misses or overprints.
Simple Operation . . . attaches quickly and easily direct to conveyor line; non-oscillating friction head uses interchangeable rubber type for clear, legible impressions.
Saves . . . expensive hand stencilling, pre-printing, storage and inventory costs.

Proved practical and economical on almost any marking problem — in plants all over the country — "Whippet" is so simple, well designed and manufactured that experience proves they serve faithfully and profitably far beyond ordinary equipment. See how they can improve your operation.

Write for details and catalog today! Dept. NED

ime INDUSTRIAL MARKING EQUIPMENT company, inc.
454 BALTIC STREET BROOKLYN 17, N.Y. MAin 4-2601

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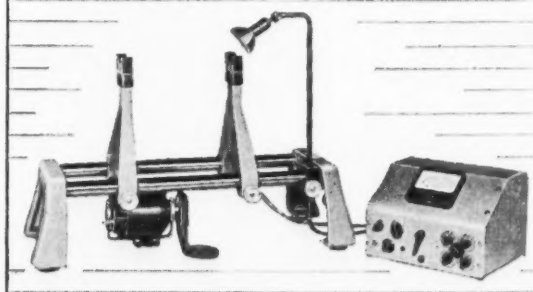
NOW! A LOW COST, BENCH MODEL BALANCER THAT WILL ELECTRONICALLY DETECT THE LOCATION AND MAGNITUDE OF UNBALANCE IN ANY ROTOR FROM 4-OUNCES TO 100 POUNDS!



MODEL SU-6 DYNAMIC BALANCER IS EASY TO OPERATE, REQUIRES LITTLE SPACE AND MINIMUM FIXTURIZATION. A MOST PROFITABLE INVESTMENT FOR MANUFACTURERS AND SHOPS HANDLING ARMATURES, ROTORS, PROPELLERS, IMPELLERS, GYROS, FANS, BLOWERS, DRUMS, ETC.

WRITE OR CALL FOR MORE INFORMATION.

M-B MICRO BALANCING, INC.
Herricks Road, Garden City Park, N. Y.
Most Famous Name In Dynamic Balancers

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DEMING VERTICAL TURBINE PUMPS

Vertical Turbine Pumps . . . for 4 to 16 inch wells. Capacities 15 to more than 3500 G.P.M. Bulletin 4700.

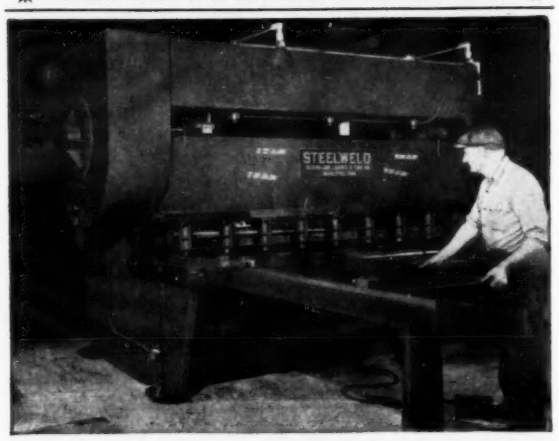
Deming's complete line of pumps for industrial requirements includes:

- Multi-Stage High Pressure Vertical Centrifugal Pumps
- "Motor-Mount" Centrifugal Pumps
- End-Suction Centrifugal Pumps
- Vertical Sump Pumps

For information and detailed specifications, contact your qualified Deming distributor or write:

THE DEMING COMPANY
520 Broadway • Salem, Ohio

▲ For more details circle NED-197 E8 on enclosed inquiry slip ▲



LIKES EASY KNIFE ADJUSTMENT

This shear cuts mild steel, stainless steel, brass, etc., of 28 gauge to ⅜ inch thick in the shop of a perforated metal manufacturer. They like the easy knife adjustment because it enables making sharp, clean cuts without burrs. This is only one of many features that make Steelweld Shears outstanding. A complete line of machines is available for all size plates.

STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

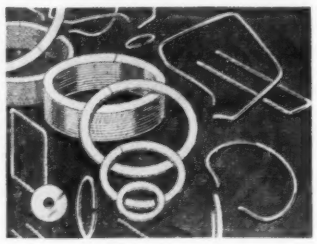
Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
6629 East 282nd St. Wickliffe, O.

STEELWELD SHEARS

▲ For more details circle NED-198 E8 on enclosed inquiry slip ▲

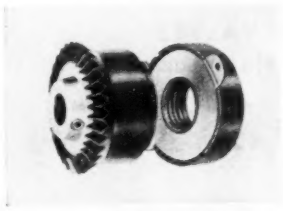
BRAZING PREFORMS offered in aluminum alloys



Line of brazing preforms includes these Alcoa alloys: 718 brazing wire and sheet, 716 brazing wire, and 713 brazing sheet. Wire sizes down to 0.031-in. diameter and sheet thickness to 0.006 in. are offered. No-tangle notch coil design facilitates use. Edgewound washers that eliminate blanking scrap losses and which require no dies are also made of aluminum. Made by **Lucas-Milhaupt Engineering Co.**, Dept. NED-1, 5051 S. Lake Dr., Cudahy, Wis.

▲ For more details circle NED-200 E8 on enclosed inquiry slip ▲

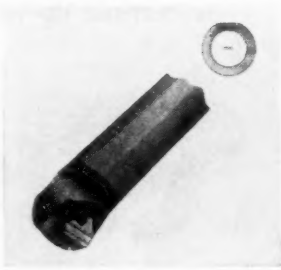
MAGNETIC CLUTCHES & BRAKES with 10 oz-in. drive torque



Redesigned 500 series multiturn, moving coil, magnetic clutches and brakes are readily fitted to standard shafts and can be used on standard breadboard setups. Type 531 miniature clutch comprises a bevel gear drive, rotating contact fingers, and a fixed slip ring which is part of a nut for fastening the bushing mount potentiometers to a panel. Type 521 consists of a bevel gear drive and rotating slip ring with fixed contact fingers. Minimum drive torque for both types is 10 oz-in. and minimum drag torque is 0.5 oz-in. Made by **International Resistance Co.**, Hycor Div., 12970 Bradley Ave., Sylmar, Calif.

▲ For more details circle NED-201 E8 on enclosed inquiry slip ▲

BORING BARS button inserts are quickly indexed



Eight sizes are available in each of two styles of Kennametal-encased Kendix boring bars. Minimum boring diameters range from 1 17/32 to 3 1/16 in. With rigidity 2.6 times that of steel, deflection and chatter are minimized. Both styles have a sleeve of Kennametal over a steel core. Three largest sizes are 16 in. long and the others are 14 in. Kendix throw-away button inserts can be indexed quickly. Style KA-C utilizes triangular inserts and provides for boring a square shoulder. Style KB-C for square inserts has a 15-degree lead angle for straight-through boring. Inserts are offered in five Kennametal grades. Made by **Kennametal Inc.**, Dept. NED, Latrobe, Pa.

▲ For more details circle NED-202 E8 on enclosed inquiry slip ▲

LONG RANGE . . . HIGH MAGNIFICATION 8 NEW MODELS SWISS MADE

Now Federal adds to its famous Testmaster series eight NEW models, all made to highest Federal standards by Swiss craftsmen, and all immediately available . . . with

- *Four times the range* and *twice the magnification* you'd expect in a test indicator.
- *Even greater magnification* (50% more) if you select large dial models. Both large and small dial models available in .0001" and .0005" graduations, Regular and Perpendicular styles.
- Many features, including Federal's exclusive integral dovetails for easy, positive mounting.

For whole story, ask for brochure.

FEDERAL PRODUCTS CORP.
8175 Eddy St., Providence 1, R. I.

Ask **FEDERAL** *First*

FOR RECOMMENDATIONS IN MODERN GAGES . . .
Dial Indicating, Air, Electric, or Electronic—for Inspecting, Measuring, Sorting, or Automation Gaging

▲ For more details circle NED-203 E8 on enclosed inquiry slip ▲

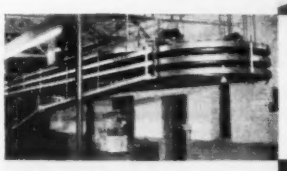
HERE'S WHAT WENDWAY CAN DO FOR YOU!

Wendway can be your "silent partner" by conveying any light products weighing 20 lbs. or less, swiftly and silently from one operation to the next. Wendway conveying systems are completely sanitary . . . safe for operators, too! Wendway will carry your products overhead, through walls, upstairs or down—to any place you want them. Wendway will eliminate wasted manpower, unnecessary handling and boost production all along the line. Standardized powered straight sections, curves, switches, etc., are operated by remote control and easily adjusted to required speeds. Wendway will smooth out your assembly processing, packing or inspection problems and pay for itself in time and equipment saved.

Remember ...Wendway answers your 'light product' conveying problems • Wendway complies with even the most rigid sanitation codes • Wendway synchronizes perfectly with other production line equipment • Wendway increases producton line profits.

Another interesting Wendway installation. Twin flights of wide belt Wendway operate continuously between production stations to convey air filters to inspection stations.

Wendway belting will not damage even the most delicate products. Automatic conveying assures products of cleaner, fresher, neater appearance.



Overhead cooling for cooked or heated products saves you time and floor space. Wendway takes 'em up, cools 'em off and brings them down—automatically!

Cartons, fragile packages, etc., are completely safe on Wendway. Smooth, silent travel delivers products in perfect shape, clean and fresh in appearance.

Write today for additional information, literature and specifications to match your conveying requirements.

UNION STEEL PRODUCTS CO., ALBION MICHIGAN

Gentlemen:
Please have your area distributor contact me at once.

Name _____ *Title* _____
Company _____
Address _____
City _____ *Zone* ____ *State* _____
The product to be conveyed is _____

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GREAT NAMES IN INDUSTRY produce MORE for LESS with PEECO

The story at PEECO can best be paraphrased — "... known by the company they keep . . ." The long list of companies that now 'produce more', because PEECO vibratory feeders are engineered to work, reads like America's industrial "Who's Who". PEECO'S technical knowledge in parts feeding can help you schedule one or more parts at a given rendezvous at a predetermined rate per hour and oriented to the exact position desired. Obviously this generates great savings. Let PEECO sales engineers help you 'produce more'. Send for new literature on the latest feeding technique.

PEECO FEEDS THEM ALL

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WE'LL BE *WATCHING* FOR YOU!

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THE WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF VIBRATORY PARTS FEEDERS

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SOLVE "TOUGH" PARTS PROBLEMS

WITH Colonial's SILICONE RUBBER

There's practically no end to the usefulness of silicone rubber as a material for making rubber parts. It won't melt or harden at 500 deg. F., won't conduct electricity, is not affected by sun, water or weather, and even dry ice can't freeze it. These and many other desirable properties which can be obtained through Colonial's expert compounding, make silicone rubber the most likely material for solving your "tough" parts problems.

Whether you are designing new products, or improving existing ones, contact Colonial Rubber Company for details on the advantages of fabricating more efficiently and *profitably* with silicone rubber. Our service is complete . . . you can call on us for any one or all three of the following:

EXPERT COMPOUNDING
ACCURATE PRODUCTION
QUICK DELIVERY

1967

COLONIAL RUBBER CO.
RAVENNA, OHIO

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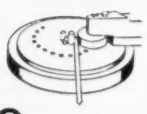
HOW TO BEND BARS and TUBING

OFF CENTER EYES

1 Insert bar stock between Locking Pin and Radius Pin of desired size.

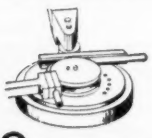


2 Set Forming Roller against material and advance Operating Arm.

3 Complete operation with one steady movement.

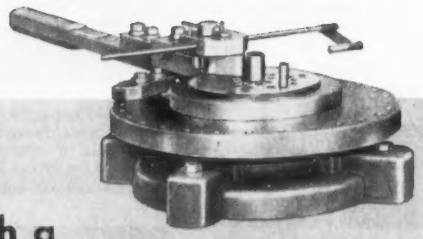
TUBING

1 Clamp tube. Insert Follow Block between material and Forming Roller.



2 Advance Operating Arm until it strikes Angle Stop.

3 Remove Follow Block, release clamp and remove tube.



with a

DI-ACRO BENDER

Complete details on forming rods and tubing with standard accessories as well as tips and technical data on angle, channel and other materials will be found in "It's Easy to Bend," a 32 page summary of Di-Acro Benders and bending. A copy is yours free of charge.

Consult the yellow pages of your phone book for the name of your nearest Di-Acro distributor or write:

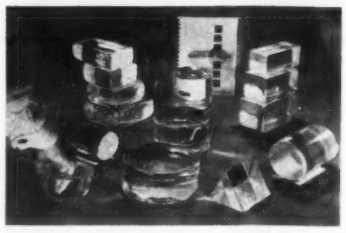
pronounced die-ack-ro

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.
354 8th Ave. • Lake City, Minn.

▲ For more details circle NED-206 E8 on enclosed inquiry slip ▲

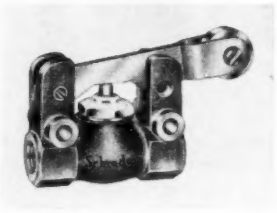
FUSED QUARTZ BLANKS forged to customer specifications



Most of the waste can be eliminated by use of fused quartz forged blanks, made to customers' specifications as rods, cubes, briquets, prisms, and other shapes in various sizes. Essentially a very pure glass, the material is used in optical, electrical, electronic, metallurgical, chemical, and aeronautical equipment because of its transparency, high melting point, chemical inertness, low thermal conductivity, and other properties. Fusing process produces homogeneous quartz with smooth, uncrazed surfaces. Made by **Engelhard Industries, Inc.**, Amersil Quartz Div., 113 Astor St., Newark 2, N. J.

▲ For more details circle NED-207 E8 on enclosed inquiry slip ▲

TWO & THREE-WAY VALVES have 70-cfm air flow capacity



Poppet type two and three-way valves have brass bodies with 1/4-in. inlet and outlet ports. In-line mounting holes and interchangeable actuating levers make possible their application to various types of air controls. Valves have a 70-cfm air flow capacity. Four types of lever action offered are: Roller, solid angle, hand, and hand lockdown. Made by **Scovill Mfg. Co.**, A. Schrader's Son Div., 478 Vanderbilt Ave., Brooklyn 38, N. Y.

▲ For more details circle NED-208 E8 on enclosed inquiry slip ▲

TEFLON WIRE MARKERS withstand up to 500° F

Teflon wire and circuit markers will not melt, flow, or distintegrate when exposed to temperatures up to 500° F. Markers retain impact strength, toughness and flexibility throughout heat range. They are nonflammable and resist attack by chemicals and solvents at elevated temperatures and pressures. Markers fit B & S gage wires in standard wall thickness and tubing sizes. Code markings are according to customer request. Markers are offered in tube lengths, or in spools. User snips off portion on which code appears and slips it on wire to identify circuit. Made by **ECP Corp.**, 4724 Superior Ave., Cleveland 3, Ohio.

▲ For more details circle NED-209 E8 on enclosed inquiry slip ▲

New Bulletin on
WORM GEARING
for designers and engineers

Yours for the asking
Bulletin 145

Bring your file up to date with this new, complete bulletin on Cleveland worm gear drives. Shows all standard units, with engineering data. Also tells how to plan and order special designs.

THE CLEVELAND WORM & GEAR COMPANY
3283 East 80th Street • Cleveland 4, Ohio
Sales Representatives in all major industrial markets

CLEVELAND Worm Gear *Speed Reducers*

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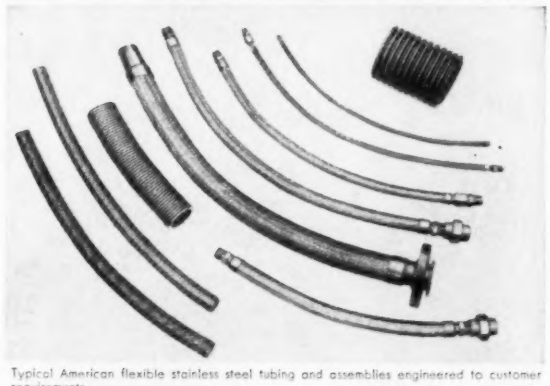


Typical American flexible stainless steel tubing and assemblies engineered to customer requirements.

FLEXIBLE TUBING THAT RESISTS CORROSION

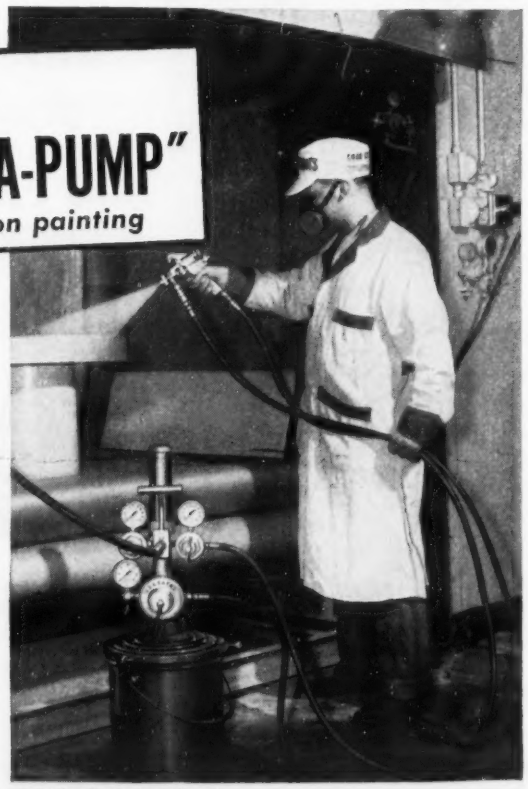
Flexible stainless steel tubing made by American Metal Hose is an ideal, economical flexible connector wherever you have to convey searching or corrosive liquids or gases under either high or low temperature and pressure conditions. This flexible tubing stands up under continuous flexing . . . absorbs severe vibration . . . compensates for misalignment . . . is easily installed.

FREE FOLDER: Gives engineering data on construction and types. Includes pressure ranges, data on fittings. Write for Bulletin STC-1. The American Brass Company, American Metal Hose Division, Waterbury 20, Conn.

WHEREVER CONNECTORS MUST MOVE AMERICAN Flexible Metal Hose and Tubing
an ANACONDA® product

▲ For more details circle NED-212 E8 on enclosed inquiry slip ▲

all-new
ALEMITE *VERSATAL*® "PORTA-PUMP"
for low-cost maintenance and production painting



Fits directly on original 5-gallon containers! **Air-powered pump operates at "2 to 1" ratio—delivers 2 lbs. of pressure at the spray gun for every 1 lb. of air pressure applied to pump. Provides ample material supply through long hose lines. Automatic, constant agitation.**

- Ideal for production operations and maintenance painting . . . in plants, shipyards and transportation shops!
- Handles a wide range of protective and finishing materials—lacquers, enamels, primers, sealers, vinyls, epoxys, urethanes, spray booth and strippable coatings!
- Easy portability . . . lightweight . . . compact design. No dollies required to move unit—even with a full container!
- No disassembly required for cleaning. Flushes clean quickly by operating pump in solvent. Faster color change-over—in minimum time, with minimum effort!

Send for FREE illustrated literature!
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Symbol of SW Excellence
ALEMITE DIVISION
STEWART-WARNER CORPORATION

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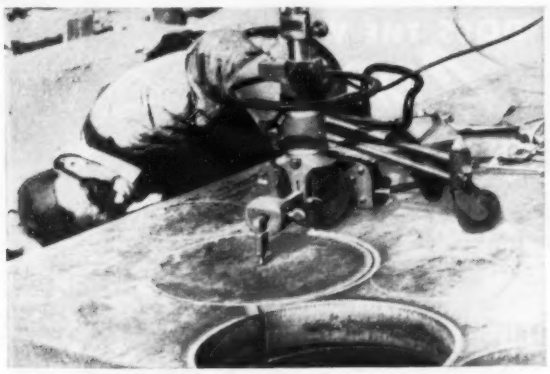

CUT METAL TO ANY SHAPE

with the ***OXWELD CM-16*** *Portable Cutting Machine*

Tailor-make special parts, cut bevels, circles or complex patterns—you can handle all these jobs with the fully portable (40 lb.) CM-16. And you cut costs on all these jobs because mechanized flame cutting with the CM-16 boosts production speed and output and cuts gas consumption to the bone.

The CM-16 is only one of a complete selection of OXWELD cutting machines available for all your needs. Call your nearby LINDE Office today or write for OXWELD Cutting Machine Catalog-Form 4487.

LINDE COMPANY
30 East 42nd Street
New York 17, New York

DIVISION OF UNION CARBIDE CORPORATION

"Linde" and "Oxweld" are trade-marks of UCC

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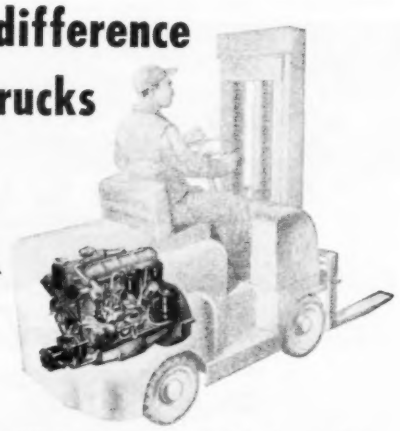
a BIG difference in lift trucks is the Engine



Allis-Chalmers lift trucks are powered by heavy-duty Allis-Chalmers engines with a world-wide reputation for outstanding performance, reliability, and ease of maintenance.

The fact that they are the most rugged used in lift trucks means thousands of extra work hours. The fact that they deliver more *usable* horsepower means they do extra work every hour.

See your Allis-Chalmers material handling dealer or send for literature telling you more about this power that makes the big difference in lift trucks.

ALLIS-CHALMERS, ENGINE - MATERIAL HANDLING DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS A-C

BH-72

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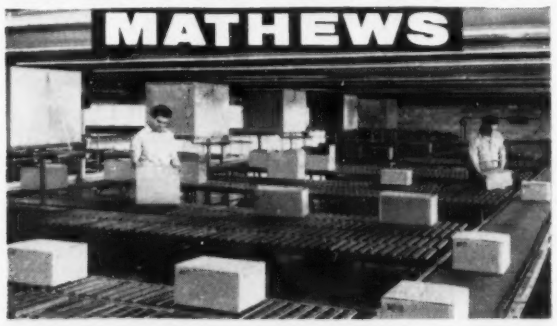
A COMPLETE LINE OF GENERAL PURPOSE BELT CONVEYERS STANDARDIZED BY... MATHEWS



• These General Purpose Belt Conveyers are furnished in a wide range of belt widths and section lengths. They can be assembled easily, for all parts are standardized and furnished from stock. The conveyers have several features which make them especially practical for the average package handling problem. The drive unit may be located at the end, or at any convenient point beneath the conveyer. End roller assemblies, takeups, and three-pulley devices are all standardized and easily installed.

Write for Bulletin G. P. 53 and Catalog 856 today.

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MATHEWS CONVEYER COMPANY, LTD. . PORT HOPE, ONTARIO

MATHEWS
Over Fifty Years of Leadership in Mechanized Handling

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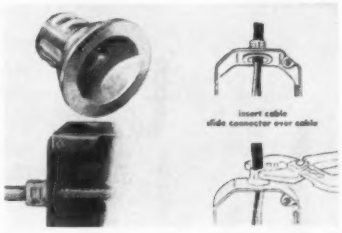
ROMEX CONNECTORS
easily installed with pliers



Fast, easy installation of pres-Sure Romex connectors on nonmetallic sheath cables, portable cords, and similar conductors is effected with squeeze of channel-lock pliers or side cutters. It is made of one-piece aluminum in 3/8-in. size to fit standard 1/2-in. knock-outs. Connector can be removed with pliers for re-use. Made by **Buchanan Electrical Products Corp.**, 225 Route 22, Hillside, N. J.

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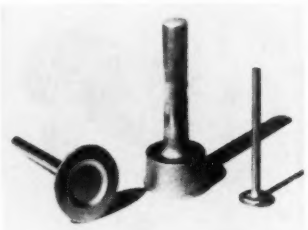
HOT-EXTRUDED FORGINGS
custom-made of steel or alloy



Precision forged from any grade of steel, or even the newest tough alloys, Valforgings feature a high-stressed cylindrical head and shaft having a head-to-shaft ratio of at least 2-to-1. Grain-flow lines are continuous and symmetrical with the outside contour, thus imparting fatigue and impact resistance which exceeds specification requirements for most applications in industry. In some cases, complex machine forming operations can be eliminated by coin-pressing head features into the forgings. They can be made to users' specifications in sizes up to 5-in. head diameter and 12-in. shaft length. Made by **Thompson Products, Inc.**, Valve Div., 1455 E. 185th St., Cleveland 10, Ohio.

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REGULATED POWER SUPPLY
used as plus or minus supply or bias

Use of computer grade filter capacitor, Sola saturated transformer, and regulated filament voltage on the 5Y3GT rectifier contributes to the precision and consistancy of the F 600 regulated power supply. Power take-off is from separate ungrounded terminals. By proper chassis grounding, the long-life unit may be used as a plus supply, minus supply, or bias. The continuous duty supply extends life of oscillators, photoelectric devices, high and uniform gain amplifiers, pulse circuits, multivibrators, and frequency detectors. Made by **Forte Engineering Co.**, Dept. NED, 59 Davis Ave., Norwood, Mass.

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Here's proof your best buy is EVER-TITE -the best quality quick couplings

Bronze
Aluminum
Stainless
Carbon
Malleable
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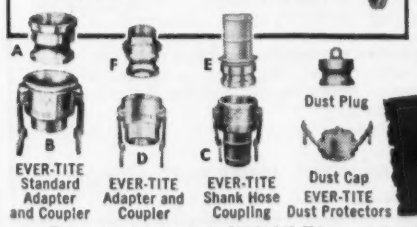
Speedy deliveries—no leaks.

Prolongs life of equipment.

EVER-TITE is the best—ask your distributor now.

EVER-TITE Coupling Co. Inc.
254 W. 54 St.
New York 19, N. Y.



Every EVER-TITE saves time and money

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BEAT THE COLD...

with nonfreezing SILICONE LUBRICANTS

efficient at -100F

Neither cold nor heat can "freeze" bearings, pins and other moving parts lubricated with Dow Corning silicone greases. Efficient at temperatures far below and above the best organic oils and greases, they improve performance, cut maintenance . . . reduce power consumption of cold equipment.

FREE BOOKLET on heat, cold and oxidation resistant Dow Corning silicone oils and greases! Write today. Address . . . Dept. 545a

first in silicones

Dow Corning CORPORATION
MIDLAND, MICHIGAN

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62 sizes of kraft cartons are on our shelves!

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Here's everything you need for a low-cost, trouble-free microfilming operation . . . one that will meet *your* individual requirements.

- **Kodagraph Micro-File Machines**—three separate models designed to meet a variety of conditions. *Each* a high-precision unit which can be operated by anyone.

- **Kodagraph Micro-File Film**—extremely fine grained, high resolution. Assures sharp, crisp rendering of all details.
- **Kodagraph Film Readers,** which permit you to view your films quickly, conveniently.
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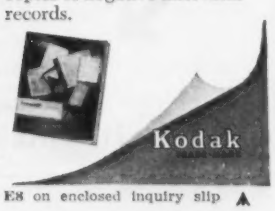
- **Kodagraph Print Film**—ideal for making positive copies of negative microfilm records.

Write today *for new booklet—"Kodagraph microfilming for new economies in record keeping."*



EASTMAN KODAK COMPANY
Graphic Reproduction Sales Div.
Rochester 4, N. Y.

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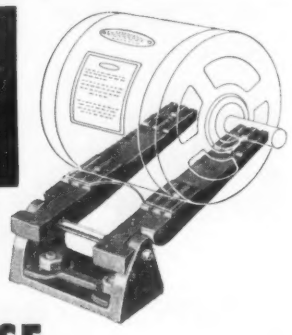
Most Practical Motor Base Ever Designed for V-Belt Drives



Lovejoy

Auto-Tension

MOTOR BASE

Inexpensive and easy to install . . . *automatically* maintains exact belt tension for all load conditions and compensates for belt stretch. Does not require adjustment or maintenance. Belts can be changed without disturbing motor.

Available for horizontal drives only . . . four base sizes for NEMA frames from 1/6 to 7½ hp. Immediate shipment.

Lovejoy Motor Bases for horizontal, angular or vertical mounting: available in tilting types for fractional to 3-hp. motors . . . sliding types for fractional to 15-hp. motors.

ASK FOR RECOMMENDATIONS AND PRICES. Request Bulletins 1300 and B-1958, also Catalog 1200.

LOVEJOY FLEXIBLE COUPLING COMPANY

4803 WEST LAKE STREET • CHICAGO 44, ILLINOIS

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VIBROLATOR®

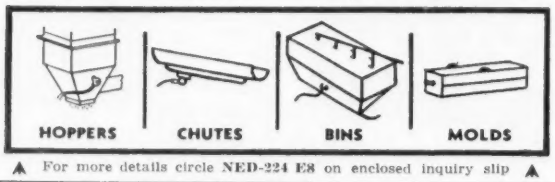
the strong silent type VIBRATOR

FOR MOVEMENT OF WET OR DRY MATERIAL

One moving part does the job—a rolling ball driven by compressed air. Needs no oil or filters. The VIBROLATOR moves materials down chutes, out of hoppers, actuates screens, brings up entrained air in wet plaster or concrete, available in 14 sizes priced from $12 to $150 from "pocket-watch" size to the new 28 lb. UCV-64, ideal for vibrating RR hopper cars. Write for catalog today.

MARTIN ENGINEERING COMPANY

155 Nedlow Street • Neponset, Illinois



▲ For more details circle NED-224 E8 on enclosed inquiry slip ▲

designed to SIMPLIFY

EVEN THE MOST COMPLEX WEIGHING JOBS

The simple Emery Hydraulic Load Cell is the heart of some of industry's most exacting weighing installations. The cell is, in effect, a transducer . . . automatically temperature-compensated . . . converting force into proportional pressures which operate indicators, recorders, controllers and printing devices. It teams up with the products of the best known manufacturers in the instrumentation field to provide highest accuracy and reliability.

In tank weighing, dynamometer testing, aircraft and rocket testing . . . whenever force measurement is a problem, the simple Emery Hydraulic Load Cell gives rugged, dependable service.

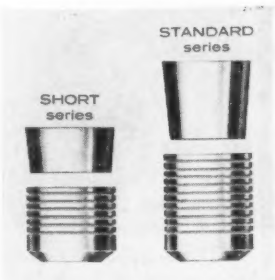
PLEASE SEND BULLETIN 561 ☐ 571 ☐
PLEASE SEND A REPRESENTATIVE ____
NAME ____
COMPANY ____
STREET ____
CITY ____ STATE ____

THE A. H. EMERY CO.

Pine Street • New Canaan, Conn.

▲ For more details circle NED-225 E8 on enclosed inquiry slip ▲

PIN PLUGS
seal drilled holes



Short pin plugs supplement standard sizes and are usable where space is a factor. The plugs effectively seal drilled holes under pressures up to 10,000 psi or even higher, depending on the hole size and material. Aluminum and stainless steel plugs are offered in a range of sizes, including one for holes only 0.06-in. diameter. Made by **Lee Co.**, Dept. N, Box 418, Westbrook, Conn.

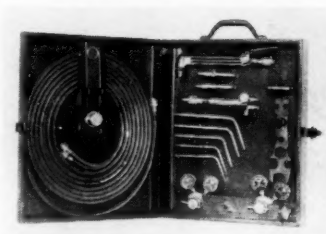
▲ For more details circle NED-226 E8 on enclosed inquiry slip ▲

CRANE HOOK BLOCK
35-ton unit only 39¾ in. high

Over-all height is only 39¾ in. on this compact 35-ton crane hook block, available with double or triple sheaves. The compact design effects an increase in lifting height of cranes, and low center of gravity of the design prevents block from toppling. All bearings have individual grease fittings. Blocks exceed requirements of Government specification MIL-H-12200A. Made by **Upson-Walton Co.**, Dept. DA, 12535 Elmwood Ave., Cleveland 11, Ohio.

▲ For more details circle NED-227 E8 on enclosed inquiry slip ▲

GAS WELDING OUTFIT
packaged unit for various uses



Weighing only 12 lb, the Redi - Set packaged welding outfit includes all necessary equipment for gas welding, cutting, brazing, soldering, and heating. It can be carried under one arm and can cut up to 4-in. armor plate. Fitted steel case or kraftboard container holds the 15 pieces of the Redi-Set, plus 25 ft of twin welding hose. An accessory and supply kit contains a selection of mild steel, high tensile steel, and bronze welding metals with the proper fluxes. Made by **K-G Equipment Co.**, Dept. NED, Box 512, Allentown, Pa.

▲ For more details circle NED-228 E8 on enclosed inquiry slip ▲

ACCURATE CO_2 Analysis in 40 Seconds!

Other outstanding features of the FYRITE CO_2 Indicator are its durable, fool-proof construction and unmatched convenience of operation. It requires no setting-up, has no valves or leveling bottle to manipulate.

The FYRITE measures CO_2 directly by the fundamental method of chemical absorption. Consequently, the reading is independent of voltage, humidity, temperature, or atmospheric pressure conditions.

Comes complete with chemical charge good for at least 300 readings. Replacing chemical merely requires removing four screws that hold top assembly in place.

Write for Bulletin 805

BACHARACH Industrial Instrument Company

200 N. Braddock Ave. • Pittsburgh 8, Pa.

▲ For more details circle NED-229 E8 on enclosed inquiry slip ▲

DOES THE WORK OF 4 DRILL PRESSES

FITS ALMOST ANY DRILL PRESS

DRILLS—REAMS
COUNTERSINKS
COUNTERBORES

quadrill

4 POSITION DRILLING & TAPPING TURRET HEAD

Saves Set-up Time • Saves Production Time

With Quadrill you can use four drilling or cutting tools on one drill press by simply indexing for each tool. Precision built for rugged duty—long service. Specify make and size of drill press when ordering QUADRILL.

CHICAGO QUADRILL *Company*

1856 BUSSE HIGHWAY • DES PLAINES, ILL.

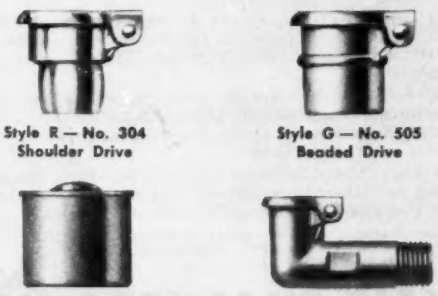
▲ For more details circle NED-230 E8 on enclosed inquiry slip ▲

Reduce Replacement and Maintenance Costs

GITS

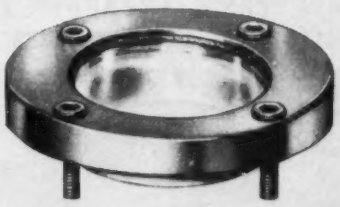
World's Largest Selection of Lubricating Devices

OIL HOLE COVERS



Style R — No. 304 Shoulder Drive
Style G — No. 505 Beaded Drive
Style GB — No. 527 Ball Valve
Style L — No. 1204 Brass Elbow (Threaded)

GEAR CASE GAUGES



Screw mounted, to set flush. Glass port is backed with white enameled reflector, to make oil level (in gear case or transmission) readily visible, even in dim light. Style CW — No. 4032.

Too much machine "down-time"? Too much time wasted in servicing your machinery? Perhaps some old, worn lubricating devices need replacement. Maybe a different, more modern device will do the job more efficiently. Whenever you replace, specify GITS Lubricating Devices—the widest selection available anywhere, right in stock. The items pictured above are only a few of our many thousands of lubricating devices. Send NOW for your free Catalog.

GITS BROS. MFG. CO.

The Standard For Industry For Almost Half A Century

1833 South Kilbourn Avenue
Chicago 23, Illinois

▲ For more details circle NED-231 E8 on enclosed inquiry slip ▲

When figuring costs of bending pipe, tube or structural metal parts, you'll come up with a winning figure every time by using PEDRICK PRODUCTION BENDERS.

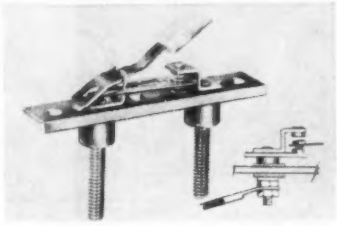
Let us give you a dollar and "sense" answer to *your* bending problems.
Write PEDRICK TOOL AND MACHINE COMPANY, 3640 N. Lawrence St., Phila. 40, Pa., Dept. 6

PEDRICK PRODUCTION BENDERS

Free "Pedrick Line" Bulletin, Write today.

▲ For more details circle NED-232 E8 on enclosed inquiry slip ▲

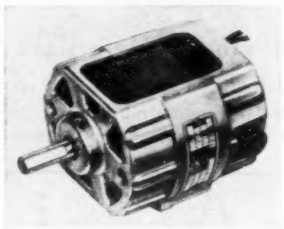
SNAP-ACTION SWITCH
combines mounting and terminals



By using the mounting stud as a terminal connector, the S25-24B snap-action switch can be installed on one side of the panel and wired from the other side. A rubber grommet on both sides provides panel insulation. Simple electrical connections are made by eyelet connectors on the wires and secured by Locknuts. Nylon actuator variations are available to application. Operating force is 5 oz maximum, and release force is 3 oz maximum. Pretravel is 3/16 in., and rating is 10 amp, 125 v ac or 5 amp, 250 v ac. Made by **Cherry Electrical Products Corp.**, Dept. NED-58, 1650 Deerfield Rd., Highland Park, Ill.

▲ For more details circle NED-235 E8 on enclosed inquiry slip ▲

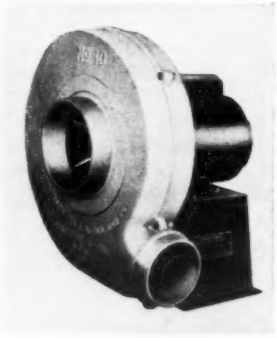
INTERMITTENT-DUTY MOTOR
1/40-hp unit runs at 5000 rpm



Small and light in weight, the Type FSE-23 motor is designed for such intermittent duty uses as office machines and actuators. It is a series-wound, self - ventilated, 1/40 - hp motor with a nominal speed of 5000 rpm. Operation is in a single direction—either clockwise or counterclockwise. Height is 2 5/16 in. Made by **Bodine Electric Co.**, Dept. A, 2254 W. Ohio St., Chicago 12, Ill.

▲ For more details circle NED-236 E8 on enclosed inquiry slip ▲

UTILITY BLOWER
for air supply and exhaust use



Available in four sizes and four discharge positions, Model PB utility blower is adaptable for original equipment and industrial uses. It has a sparkproof aluminum housing and wheel, and is suited for air supply and exhaust purposes. It is fitted for direct motor drive with the fan housing attached to a flange type motor. Pad in intake side permits flush mounting in horizontal or vertical position. Features are nonoverloading design and permanently lubricated motors. Made by **Cincinnati Fan & Ventilator Co.**, Dept. ND, 3548 Montgomery Rd., Cincinnati 7, Ohio.

▲ For more details circle NED-237 E8 on enclosed inquiry slip ▲

so simple
. . . so safe
. . . so convenient

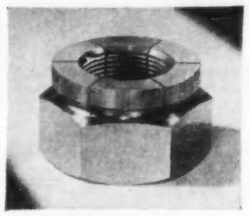
Just plug in and flip the handle ON, and the Heinemann Safelet goes on duty in your machine shop, factory, or laboratory . . . wherever you want complete protection of an individual circuit or piece of equipment.

This handy combination of circuit breaker and protected outlet is foolproof. The Heinemann circuit breaker can't be held closed against a short or overload. And like a light switch, it's a cinch to operate. Comes in 6, 10, 15, 20, 25, 30, 35, 40, and 50 amp ratings with a variety of single or duplex receptacles: twist-lock, polarized, T-slot and standard. Flush or surface mounting enclosures . . . pilot light models available if desired.

More information? Write for Bulletin 1000.

HEINEMANN ELECTRIC COMPANY
S.A. 1701 106 Plum Street, Trenton 2, New Jersey

▲ For more details circle NED-233 E8 on enclosed inquiry slip ▲



Flexloc self-locking nuts
protect assemblies, cut maintenance

Use FLEXLOC lock and stop nuts wherever bolted connections are needed; wherever exact adjustments must be made and held; wherever predetermined play or gap is required; wherever vibration and impact occur. They won't work loose, they protect assemblies, reduce maintenance. And the 1-piece, all-metal construction speeds assembly by eliminating such auxiliary locking devices as double nuts, cotter pins and washers.

FLEXLOC self-locking nuts—in sizes from #0 to 2 in., and in alloy steel, brass, aluminum, and stainless steel—are stocked by industrial distributors. Ask your authorized FLEXLOC distributor for complete information. Or write Flexloc Locknut Division, STANDARD PRESSED STEEL CO., Jenkintown 24, Pa.

SPS Jenkintown • Pennsylvania
Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co., Inc. • Nutt-Shell Corporation • SPS Western • Standco Canada Ltd. • Unbrako Socket Screw Co., Ltd.

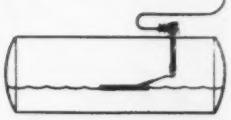
▲ For more details circle NED-239 E8 on enclosed inquiry slip ▲

100% AUTOMATIC TANK GAUGING

Dependable remote reading tank contents gauges using a closed hydraulic transmission system. No power required.

Several sizes available. Approved by Underwriters Laboratories and Factory Mutual. UL approved switches.

Write for complete details, to Dept. H



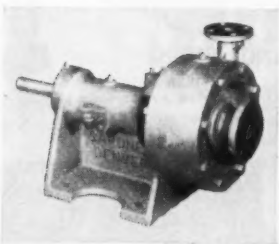
Since 1920 of proven quality

THE LIQUIDOMETER CORP.
LONG ISLAND CITY 1, NEW YORK

▲ For more details circle NED-240 E8 on enclosed inquiry slip ▲

BH Pumps . . .

NEW DESIGN
for general water service



The new Gardner-Denver line of *high-speed, high-head* BH centrifugal pumps—for general water service—performs at high efficiency over a wide variety of operating conditions. These pumps are available in 1", 1½", 2" and 3" sizes—with capacities of 150, 220, 440 and 520 gpm, respectively.

New design features include stainless steel shaft as standard . . . heavy-duty, oil-lubricated ball bearings . . . mechanical seal that eliminates packing problems . . . casing of high-strength alloy iron that produces gradual velocity changes for smooth flow, better efficiency. Write for Bulletin 2-2e.

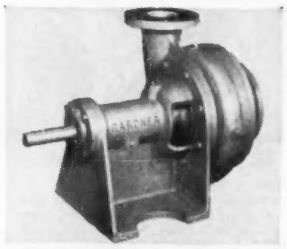
ENGINEERING FORESIGHT—PROVED ON THE JOB IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

GARDNER - DENVER

▲ For more details circle NED-234 E8 on enclosed inquiry slip ▲

BL Pumps . . .

PEAK PERFORMANCE
even when conditions vary



Gardner-Denver BL centrifugal pumps are designed to deliver peak performance over a broad range of service conditions. These versatile pumps take variations—either in the head or water volume.

Each size (there are five from which to choose) handles a wider-than-usual range of pressures and capacities. Each has heavy-duty ball bearings, factory-lubricated . . . extra large shaft to assure continual alignment . . . strong supporting frame . . . trouble-free mechanical seal. Write for Bulletin A-8.

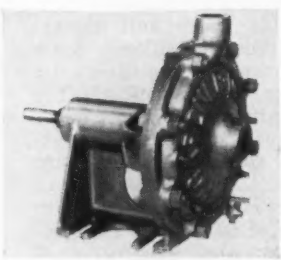
ENGINEERING FORESIGHT—PROVED ON THE JOB IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

GARDNER - DENVER

▲ For more details circle NED-238 E8 on enclosed inquiry slip ▲

CAY Pumps . . .

REVERSE ROTATION
without alteration



Gardner-Denver CAY reversible centrifugal circulating pumps supply abundant cooling water—*regardless of rotation*—to air compressors, diesel engines or other water-cooled machines.

These pumps require no alterations whatsoever for reversing rotation, but operate efficiently in either direction. They can be installed in any position on a machine. It is not necessary to turn the pump around when moving from one side of the machine to the other. Simplified piping design requires the minimum of fittings. Mechanical seal eliminates packing problems. Write for complete information.

ENGINEERING FORESIGHT—PROVED ON THE JOB IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

GARDNER - DENVER

▲ For more details circle NED-241 E8 on enclosed inquiry slip ▲

Low-cost ventilation

R&M-HUNTER INDUSTRIAL FAN

HUNTER

For sidewall, penthouse, spot cooling

- 24" to 48" blades
- Effective up to 1/2" static pressure
- Totally enclosed motor
- Easily installed frame
- Streamlined air inlet
- Certified air deliveries
- Automatic shutters

For catalog and prices, write
HUNTER DIVISION — ROBBINS & MYERS, INC.
2632 Frisco Ave., Memphis 14, Tenn.

▲ For more details circle NED-242 E8 on enclosed inquiry slip ▲

Blaw-Knox Grating provides movable floors to simplify plant operation

Blaw-Knox grating for floors and mezzanines helps you to meet effectively your changing space requirements . . . solves the problem of reaching and servicing the largest types of equipment. Sections come up easily to allow ample space for maneuvering and maintenance. Costly alterations are virtually eliminated.

For increased plant safety and sure support of heavy loads, Blaw-Knox Electroforged® Grating provides sturdy, one-piece construction. Non-slip cross bars and a wide variety of bearing bars assure safe footing under all conditions.

For new ideas and more details about this complete line of space saving grating—walkways, stair treads and flooring fabricated to your specific needs—write for Bulletin 2486.

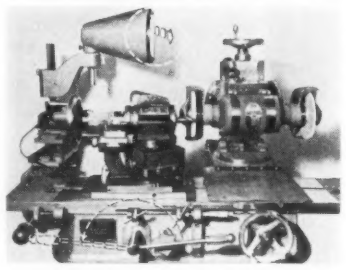
BLAW-KNOX COMPANY

BLAW-KNOX

Equipment Division
Dept. F, Pittsburgh 38, Pa.

▲ For more details circle NED-243 E8 on enclosed inquiry slip ▲

OPTICAL COMPARATOR
attaches to form relieving grinder

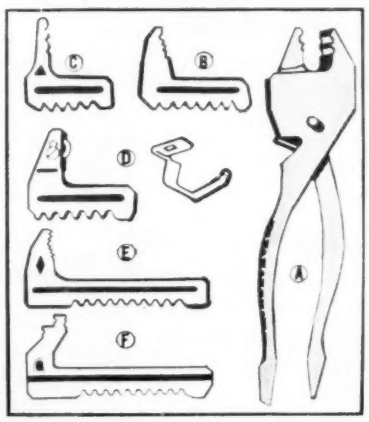


Available on new R-O universal form relieving fixture and grinder is an optical comparator that permits checking progress of the grind and accurate comparison with an enlarged template drawn on the ground glass. Attachment mounts on a bracket attached to the grinder. It swings from an out-of-the-way position, bringing the lens over the work. A 20-to-1 magnified profile image is projected on the 8-in. ground glass. The tool remains in the chuck and the fixture setup is undisturbed during optical checking. Comparator can be installed on existing grinders by returning the grinder table to the factory. Made by **Royal Oak Tool & Machine Co.**, 29802 Stephenson Highway, Royal Oak, Mich.

▲ For more details circle NED-244 E8 on enclosed inquiry slip ▲

PLIER-WRENCH
multipurpose tool made in two sizes

Made of chromium-molybdenum forged steel, the Plierench is a combination tool with 1-ton gripping power, parallel closing jaws, automatic lock and ratchet action, and form-fit handle. Both the 7 and 8½-in. sizes are equipped with a universal jaw (A), pipe jaw (B), and wire jaw (C). Tube cutter set with V-clip (D), Giant pipe jaw (E), and Giant jaw (F) are available for the 8½-in. tool only. Jaws have four-way V-grooves for holding all shapes. Tool can also be used as a lock-grip ratchet wrench, socket and angle wrench, clamp, or bending tool. Made by **Plierench Co. of America**, Dept. N, 4611 N. Ravenswood Ave., Chicago 40, Ill.



▲ For more details circle NED-245 E8 on enclosed inquiry slip ▲

Cooling Towers

Halstead & Mitchell—Belt drive, direct drive, and take-apart propeller fan type cooling towers in capacities from 2 to 125 tons of refrigeration are discussed in 8-page Bulletin EC-500. Rating data are given to aid in selection.

▲ For more details circle NED-246 E8 on enclosed inquiry slip ▲

STOP

SLIPPING ACCIDENTS ON RAMPS

A.W. ALGRIP on ramps provides super-safe footing—under the *most hazardous* slipping conditions!

ALGRIP, world's only abrasive rolled steel floor plate, is made by a patented process in which a grinding-wheel type abrasive has been rolled—not coated to a controlled depth as an integral part of tough steel. The abrasive particles provide maximum traction, unaffected by oil, grease or water. Usage merely exposes more abrasive.

Make a test installation. ALGRIP fabricates easily—requires no maintenance—will pay for itself in accident and insurance reductions.

For complete information write on company letterhead to Dept. AL-E28.

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

ALGRIP—*approved for safety by Underwriters' Laboratories*

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.
Other Products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grades)

▲ For more details circle NED-247 E8 on enclosed inquiry slip ▲

Get this new buying guide
for LABORATORY and PRODUCTION OVENS

New 8-page color illustrated brochure describes re-designed models of four laboratory ovens and six production type ovens in Standard, Heavy Duty and Super Duty Capacities.

Comprehensive diagrams showing the Despatch "Whirlblast" Forced Air convection systems are included. Construction and engineering features are clearly illustrated by separate photographs of important components. Pictures show typical installations and give specifications of 10 models of gas and electric fired ovens in the Despatch "V" series. Discover how Despatch Engineering Service can help you with your selection of a new oven that will exactly fulfill your needs.

write for your copy of BULLETIN #100 now

DESPATCH OVEN CO. Established in 1902

DESPATCH OVEN COMPANY
325 8th Street S.E.
Minneapolis 14, Minnesota

▲ For more details circle NED-248 E8 on enclosed inquiry slip ▲

Improved

FOR BETTER STEAM REGULATION

FISHER TYPE 92B

PILOT OPERATED REDUCING VALVE

Quicker, Easier Maintenance . . .

Fisher engineers have done it again! The 92B is not only extremely accurate, compact and flexible—but it minimizes problems inherent in steam regulation such as clogged orifices, sticky valves and diaphragm rupture. One pilot with three interchangeable springs covers a range of from 2 to 150 p.s.i.

Write for bulletin D-92

FISHER GOVERNOR COMPANY
Marshalltown, Iowa
Woodstock, Ontario

FISHER Controls

▲ For more details circle NED-249 E8 on enclosed inquiry slip ▲

Fluorescent Lighting Helps the

DAZOR FLOATING MAGNIFIER

Step Up Accuracy and Speed

In Toolmaking • Diemaking • Machining • Assembly
Inspection • Testing • Plant Laboratory Work
Engineering • Drafting • First Aid

Sharp, 3-diopter magnification has a big extra in this Dazor—built-in, directed lighting from three T5 6-watt fluorescent tubes. Double-convex lens, 5" in diameter, stays exactly where placed by user for fast, comfortable seeing. Universal model shown. Same *Floating-Arm* convenience in popular Desk and Pedestal models. Call your Dazor distributor. Dazor Manufacturing Corp., St. Louis 10, Mo.

. . . Makers of

DAZOR FLOATING LAMPS

▲ For more details circle NED-250 E8 on enclosed inquiry slip ▲

Pneumatic tools by AIRETOOL speed up production

for grinding

for sanding

for hand drilling

for heavy drilling

for die grinding

Airetool's new line of portable pneumatic equipment is designed for fast, easy, more economical operation. Each tool is powered by Airetool's dependable pneumatic motor . . . the result of more than 27 years' experience in designing, developing and manufacturing pneumatic powered equipment.

Speed production and reduce operating costs by selecting your tools from the complete Airetool line.

GRINDERS

Horizontal and vertical models up to 8" wheel capacity and full range of speeds. Also high-speed midget die grinders.

DRILLS

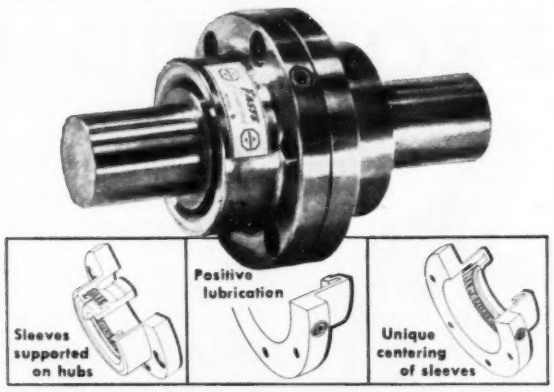
Complete range of small lightweight production models 3/16" to 1/4" in all speeds. Also heavy duty 3/4" capacity model.

AIRETOOL
MANUFACTURING COMPANY
SPRINGFIELD, OHIO

Write for Pneumatic Tool Catalog No. 63

BRANCH OFFICES: New York, Chicago, Tulsa, Philadelphia, Houston, Baton Rouge.
REPRESENTATIVES in principal cities of U.S.A., Canada, Mexico, Puerto Rico, South America, England, Europe, Italy, Japan, Hawaii.
EUROPEAN PLANT: Vlaardingen, The Netherlands.
CANADIAN PLANT: Brantford, Ont.

▲ For more details circle **NED-251 E8** on enclosed inquiry slip ▲



Fast's Model B Coupling reduces downtime and upkeep for light-to-medium drives!

Now you can profit from the durability and economy of famous Fast's couplings in a smaller and lower-cost version—available in 5 sizes for shafts 1/2" to 3 1/8" in diameter.

The Model B coupling gives you the same features that have made Fast's the world's leading coupling for over 35 years. You get the same trouble-free performance, longer service life and lower maintenance costs. You also get prompt delivery because stocks are on hand to meet practically every need. Free engineering service is also available.

Write today for more details to KOPPERS COMPANY, INC., Fast's Coupling Dept., 3805 Scott Street, Baltimore 3, Md.

KOPPERS
THE ORIGINAL **FAST'S Couplings**
Engineered Products Sold with Service

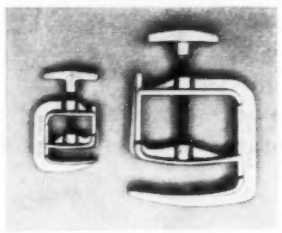
▲ For more details circle **NED-252 E8** on enclosed inquiry slip ▲

SELF-ALIGNING BEARING eliminates backlash in linkage uses

Precision - ground, self-aligning bearing features an unusual interlocking race with 100 per cent contact between race and ball. Tolerances as close as 0.0002 in. are assured. Bearing eliminates backlash in actuator and linkage applications on aircraft, missile, and military assemblies. Bearing is not swedged—the interlocking race, in which both halves extend slightly beyond center, forms a complete mass when assembled. It can be supplied in alloy tool steel, stainless steel, tungsten carbide, titanium, or any other metal that can be machined. Made by **Fuller Tool Co.**, 4002 11 Mile Rd., Berkley, Mich.

▲ For more details circle **NED-254 E8** on enclosed inquiry slip ▲

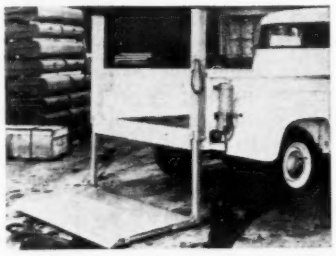
HOSE VALVES regulate or shut off flow



Camac hose valves are available in two sizes for 1/2 to 1-in. ID and 1 1/2 to 2 1/2-in. ID hose. They are made of aluminum with a bronze threaded stem and have a minimum weight drag on the hose. Valves slip on any hose without disconnecting or damaging it, and are satisfactory for pressures to 100 psi. Made by **Carl Buck & Associates**, Dept. NED, Box 267, Essex Fells, N. J.

▲ For more details circle **NED-255 E8** on enclosed inquiry slip ▲

HYDRAULIC LIFT GATE for 1/2 and 3/4-ton pick-up trucks



Capacity to raise or lower up to 800-lb loads is built into the Express-O-Lift hydraulically - operated lift gate. Suited for 1/2 and 3/4-ton pick-up trucks, it enables one man to load and unload his shipment. Supplied as a single unit, it is easily bolted to the truck body in place of the original tail gate. Its hydraulic lifting mechanism is driven by a small electric motor powered by the truck battery. Loads are lowered by gravity. A single lever controls all gate operations, and an automatic control stops the gate instantly when the lever is released. Operation with an overload is prevented by a safety valve. Made by **Anthony Co.**, 1651 Baker St., Streator, Ill.

▲ For more details circle **NED-256 E8** on enclosed inquiry slip ▲

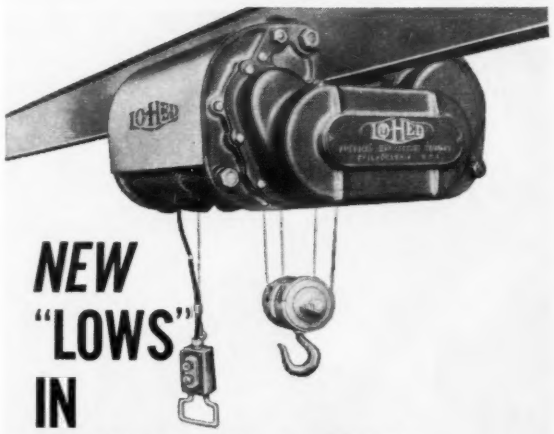
put Vibration to useful work

JEFFREY Electric Vibrating Feeders solve many problems of conveying solid materials—fine powders or huge stone blocks, a few ounces to two thousand tons per hour, dripping wet or bone dry, at temperatures ranging from 30° below zero to 2,000° above.

Balanced vibration in a Jeffrey electric or mechanical vibration system makes it economical to operate, easy on maintenance. Catalog 870 describes the complete line of Jeffrey Vibrating Equipment.

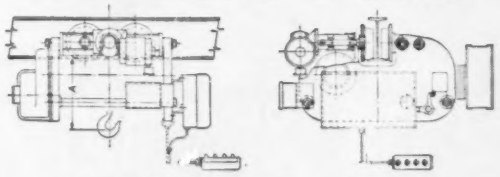
JEFFREY
THE JEFFREY MANUFACTURING COMPANY, COLUMBUS 16, OHIO

▲ For more details circle **NED-257 E8** on enclosed inquiry slip ▲



NEW "LOWS" IN HANDLING COSTS...

benefit from Low Price, Low Headroom, Low Maintenance with the NEW LO-HED 4-Wheel Motor Trolley Hoist



Just look at these headroom figures—they can't be beaten

Headroom*	Capacity	Height of Lift	Speed in FPM Hoist	Speed in FPM Trolley
11 in.	1-1 1/2-2	20 ft.	15-35	45
14 in.	2-3	20 ft.	25-16	60
19 in.	3	15 ft.	18-24	45
15 in.	4	20 ft.	16	60
25 in.	5	15 ft.	14	60
26 in.	6	15 ft.	12	60

*Figures apply to hoists using A.C. current.

Check these features—no other comparable hoist offers as much

Trolley	Hoist
Steel construction	Straight line spur gear drive
Single speed	Heavy-duty roller bearings
Push-button control	Heavy-duty controller
110V pilot circuit	Heavy-duty hoist motor
Cast-steel drive wheels	Automatic holding brake
Tapered roller bearings	Automatic lowering brake

Available for both A.C. and D.C. — all voltages and frequencies.

Any way you look at it, you won't find a better hoist for your materials handling dollar. Send for details today — just fill out and mail the coupon.

AMERICAN ENGINEERING COMPANY
Wheatsheaf Lane and Sepviva Street
Philadelphia 37, Pennsylvania
Branch Offices in: Jersey City • Cleveland • Chicago

Canadian Subsidiaries: Affiliated Engineering Corporations, Ltd. Montreal, P.Q.

Bawden Industries, Ltd. Toronto, Ont.

AE Products are: TAYLOR, PERFECT SPREAD and VIBRA-GRATE STOKERS, HELE-SHAW and HYDRAMITE FLUID POWER, LO-HED HOISTS, LO-HED CAR PULLERS, MARINE DECK AUXILIARIES

To: American Engineering Company H-172
Wheatsheaf Lane and Sepviva Street
Philadelphia 37, Pennsylvania

I am interested in the new LO-HED. Please quote me the new "low" for a hoist with the following specifications:

Capacity.....tons I-Beam Size.....
Current.....
Name.....
Title.....
Company.....
Street.....
City.....Zone.....State.....

DISTRIBUTORS AND AGENTS: Distributorships and agencies for Lo-Hed Electric Hoists are available in many parts of the country. If you are interested, call or write Ed Boyer, Sales Manager, A-E's Materials Handling Division.

▲ For more details circle **NED-258 E8** on enclosed inquiry slip ▲

Bata cuts mold cleaning time in half with Pangborn Hydro-Finish

Bata Shoe Co., Belcamp, Md., used to clean shoe molds by pickling. Today Bata's Hydro-Finish Machine gives top cleaning quality, does the job *in half the time!* It has required "no maintenance whatsoever" and, in addition, acid disposal problems have been eliminated.

Pangborn Hydro-Finish costs less to maintain and gives you easier handling and added efficiency. Write today for Bulletin 1403 to PANGBORN CORP., 2400 Pangborn Blvd., Hagerstown, Md. *Manufacturers of Blast Cleaning and Dust Control Equipment.*

Pangborn
BLAST CLEANS CHEAPER

▲ For more details circle **NED-253 E8** on enclosed inquiry slip ▲

CUT DOLLAR LOSS

with *Leak Lock*

the joint sealer that prevents leaks where others fail!

Here's real leak prevention . . . an easy-to-use, economical joint sealer that holds reactive gases, oils, gasoline, petro-chemicals, chlorinated solvents and refrigerants which eat through ordinary joint sealers. And it remains flexible indefinitely . . . stretches rather than breaks . . . the dependable choice for stopping wasteful or hazardous leaks in the petroleum, chemical, atomic energy, electronic, refrigeration and other fields.

Approved by Underwriters' Laboratories for gas and oil equipment list, and for propane and butane.

FREE SAMPLE—"Leak Lock" is available in handy tubes and in cans. Write on your letterhead for sample tube.

HIGHSIDE CHEMICALS INCORPORATED
14 Colfax Avenue • Clifton, N. J.

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LOWEST COST TOOLS YOU CAN BUY

True Temper tools are not the "cheapest"—but they cost much less in the long run.

ROCKET HAMMERS, for instance, outlast ordinary hammers many times. Tubular-steel safety handle is strongest ever made. Head can't loosen, grip won't slip. Made in a variety of weights and patterns for all kinds of industrial service.

TAPER-FORGED SHOVELS have thicker metal at wear points, no deadweight. Penny for penny, they're the l-o-n-g-e-s-t lasting shovels you can buy. What's more, they let a man turn out considerably more work per shift. Choose from lightweight DYNALITE, industrial-service BANTAM, contractors' FOX.

For quick service on these best buys in tools, call your True Temper industrial distributor.

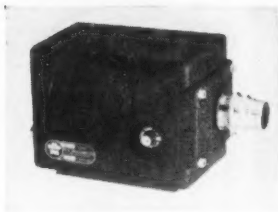
WRITE FOR FREE CATALOG
"TOOLS FOR INDUSTRY"
True Temper
1623 Euclid Avenue
Cleveland 15, Ohio

INDUSTRIAL DISTRIBUTORS · SERVING INDUSTRY ECONOMICALLY · THE RIGHT HAND OF PRODUCTION

TRUE TEMPER
THE RIGHT TOOL FOR THE RIGHT JOB

▲ For more details circle **NED-260 E8** on enclosed inquiry slip ▲

MOTION PICTURE CAMERA
high speed intermittent types take up to 400 frames per second



DBM III and DBM IV 16-mm high-speed intermittent motion picture cameras, capable of film speeds up to 400 frames per second, have 100-ft and 200-ft film capacities respectively. Film is stopped completely during each exposure and locked in position by register pin. This assures high resolution and sharpness for data recording previously considered impossible.

Both models are powered by 28-v dc or 115-v ac motors and operate at 200 or 400 frames per second. Speeds of 4, 8, 16, 32, 64, and 128 fps are available. Tested successfully under 100-g loads, cameras are suited for rocket sled and airborne applications. Equipment includes film-footage indicator, dovetail baseplate, film-end cutoff switch, C-mount lens plate, and interchangeable 72-degree shutter. Made by **D. B. Milliken Co.**, Box 448, Arcadia, Calif.

▲ For more details circle **NED-261 E8** on enclosed inquiry slip ▲

ELECTRO-EROSION MACHINE
produces very exact dimensions with minimum electrode consumption

Electrode consumption as low as 5 per cent when eroding hardened tool steel or stainless steel with a copper electrode is a performance feature of the Agietron AA 05 electro-erosion machine. Normal working accuracy is ±0.0004 in. and boring capacity is 0.002 to 1½ in. diameter. Machine comprises three units: Machine tool proper, generator, and pump assembly.

Feed and operation are regulated by an electrochemical servo system. Adjustment of voltage, current, and capacity by electric switches provides the spark density needed for the desired surface finish and rate of stock removal. Surface finish of 10-12 microinches rms is possible with hardened steel, or 5-6 microinches rms with carbide.

The work head can be inclined to ±30 degrees from the vertical for machining of flat and irregular surfaces at any desired angle. A depth limit switch automatically controls to an accuracy of 0.0004 in. Available from **Cosa Corp.**, 616-624 Chrysler Bldg., New York 17, N. Y.

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make hardness tests
ANYWHERE
WITH THE
NEWAGE TESTER

- CLAMPS, JAWS & BASE PLATE ARE ELIMINATED
- NO CONVERSIONS OR CALCULATIONS
- TEST ANY SIZE, SHAPE OR TYPE METAL
- NO SKILL REQUIRED
- SCALE READINGS IN ROCKWELL & BRINELL
- ACCURACY GUARANTEED

Many thousands used by industry and government. Write, wire or call for additional details and prices.

NEWAGE INDUSTRIES, INC.
222 York Road *Jenkintown, Pennsylvania*
TUrner 4-8494 *Dept. N.E.D.*

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Howes Granulator introduces a new principle of cutting, sizing and discharging. A simple, rugged unit with special cutting rings rotating on offset centers, it offers high-speed accurate shearing without heating—greater capacity per h.p.—only two moving parts. Low first cost. Low operating cost. Well worth investigating. Write for facts.

S. HOWES CO., INC.
Silver Creek, N. Y.
MANUFACTURING ENGINEERS

EUREKA Mixing, Sifting and Blending • Size Reduction • Screening • Weighing and Packing • Materials Handling • Cleaning and Grading **EQUIPMENT**

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PROTECTION

against
RUST - - - - -
SHOCK - - - -
ABRASION - -
with
HIGH QUALITY
Plastic-seal

Hot Dip Coating is Easy to Apply Simple to Remove!

Plastic Seal encloses articles in skin-tight coating that is water-proof and air-tight—provides full protection. Saves up to 90% in packaging costs. Use Plastic Seal, the modern, fast, economical method for shipping, storing, handling and packaging precision parts. Easy to apply, simple to remove.

WRITE FOR FREE BULLETIN
See how to best use Plastic Seal coatings and dipping equipment for high production materials handling methods. How parts are dipped, shipped, stored. Methods of applying, how to remove, proper tank and temperatures to use, etc. Write.

Plastic Seal

GLOBE IMPERIAL DIVISION OF AINSWORTH PRECISION CASTINGS CO.
2023 KISHWAUKEE STREET
ROCKFORD ILLINOIS

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READ
any surface temperature
with *Alnor* PYROCON

Equipment...material...metallic or non-metallic...flat, curved... revolving or stationary—you can read every surface temperature accurately in less than 3 seconds!

Compact, complete in precision design, this rugged instrument assures highest standards of speed, accuracy and dependability.

Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 529, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

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WECKESSER

molded BLACK NYLON SCREWS *and* NUTS

Acid resistant . . .
Need no insulation . . .
Can't rust . . .
Can't corrode . . .

● CUT ASSEMBLY TIME
4-40, 6-32, 8-32, 10-32 and ¼-20 in stock. Actual production samples will give you the whole story. Write on your letterhead.

WECKESSER COMPANY
5707-09 Northwest Hwy. • Chicago 30, Ill.

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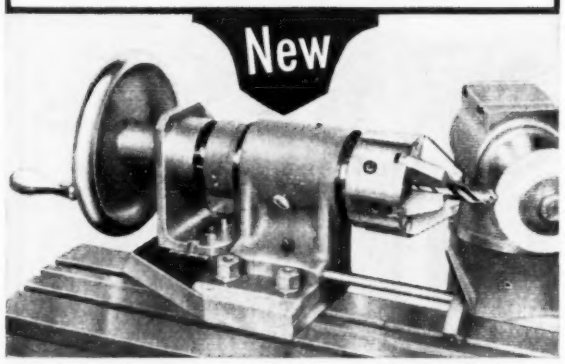
TRUKUT POINTMASTER

Produces & Reproduces "Tru-Kut" Points On Drills . . . Easier, Faster And At Much Lower Cost



Now! After quick and easy set-up on Point Master, you can grind Tru-Kut drill points having any required cutting or relief angle. Also, from original set-up, duplicate drill points can be produced again and again. The Tru-Kut Point Master is comparatively low in cost and assures faster drill sharpening.

The Tru-Kut Point Master can be used on most cutter grinders, universal grinders and surface grinders. Standard grinding wheels are used. The front edge of wheel periphery is dressed to a radius that provides the self-centering "Tru-Kut" point.

Types of drills you can resharpen with the Tru-Kut Point Master for more efficient drilling are almost unlimited. You can also grind; lead angles and chamfers with radial clearance on taps; chamfers, end cuts and chip-breakers on 2-flute and 4-flute tools; chamfers and points on step-drills; thin-out webs at front; and gash cutting edges.

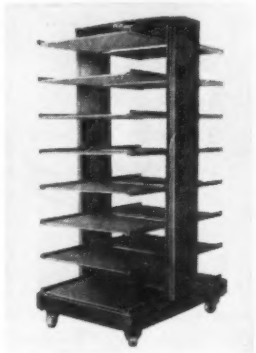
TRU-KUT Drill Points Assure:

- Rounder Holes
- Straighter Holes
- Truer sized Holes
- Practically burr-free Holes
- Less Bell-mouthing
- Self-centering drills
- Longer drill life
- Cooler cutting drills
- Cutting edges from O.D. to center of drill point
- Proper clearance on entire cutting edge of point

DETROIT REAMER & TOOL CO.
780 WEST MAPLE ROAD
P.O. BOX 174 • BIRMINGHAM, MICHIGAN

▲ For more details circle NED-268 E8 on enclosed inquiry slip ▲

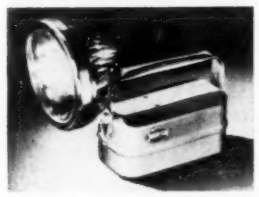
PORTABLE STOCK RACKS
for moving small parts, paper stock



Up to 40 sq ft of storage space is provided in just a few square feet of floor space by these portable stock racks. Practical for storage and movement of small parts, pieces, or paper stock, racks have large rubber-tired casters. They are made of heavy gage steel and have removable Masonite shelves. Model A affords 20 x 27 in. of space on each level; Model B, 22 x 34 in. of space. Made by **Challenge Machinery Co.**, Dept. NED, 1943 Thomas St., Grand Haven, Mich.

▲ For more details circle NED-269 E8 on enclosed inquiry slip ▲

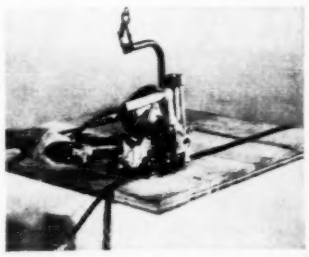
FLASHER LANTERN
also has 100-hr sealed-beam bulb



Searchlight head of Flasher Lantern No. 2002 provides a rear red light for both steady glow and red flashing warning. Head has a 100-hour sealed-beam lamp, a flasher lamp, a 4-in. reflector, and the red lens that forms the back half. Each lamp has an independent switch so that light is available with red glow or red flasher to the rear. Power source is 6-v lantern battery. Other features are 90-degree adjustable beam angle, and carrying handle. List price is $9.95. Made by **Bright Star Industries**, 600 Getty Ave., Clifton, N. J.

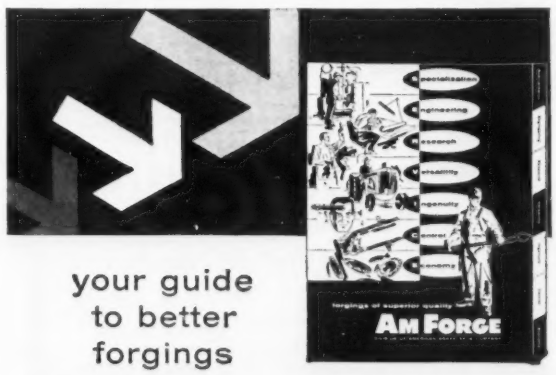
▲ For more details circle NED-270 E8 on enclosed inquiry slip ▲

STEEL STRAPPING TOOL
tensions, seals, and cuts under power



Used in any position to apply either vertical or horizontal straps, the A4 pneumatic Steelstrapper performs all actions — tensioning, sealing, and cutting—under air power. Each strap is applied to predetermined tension by means of handle throttle. Another control seals the joint and cuts the strap flush with the seal. Tool will not function unless straps are aligned under gripping dog and sealing mechanism. Sealer must go through its complete cycle before tool will cut the strap. Models A4A4, A4A5, and A4A6 respectively handle ½, ⅝, and ¾-in. strapping ranging from 0.015 to 0.023-in. gage. Made by **Acme Steel Co.**, 135th Street & Perry Avenue, Chicago 27, Ill.

▲ For more details circle NED-271 E8 on enclosed inquiry slip ▲



your guide to better forgings

the AmForge Catalog

To give you savings and improve your product it will pay your company to consider forgings. You'll find the facts about forgings in this 16-page AmForge catalog. This compact book provides you with helpful information on drop, upset and press forgings. It gives you an inside view of AmForge facilities. You see how quality forgings are produced by our research, engineering and die-making departments.

FREE—Send for your free catalog today. Either circle the number on the magazine service card or write AmForge, Department NED-58, 155 North Wacker Drive, Chicago 6, Illinois.

AMERICAN Brake Shoe COMPANY **AmForge Division**
Plants: Chicago, Ill. (two) • Azusa, Calif.

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This NEW Manual Starter has EVERYTHING!

NEMA Sizes 0 and 1
Two, three and four-pole construction

Write for BULLETIN 2510 B-C
Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE

SQUARE D COMPANY

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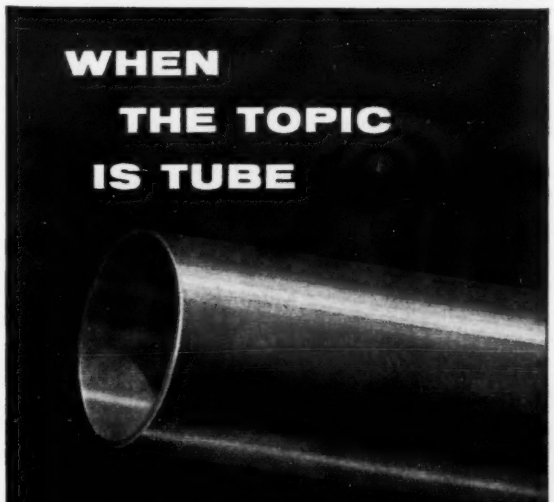
WHEN THE TOPIC IS TUBE

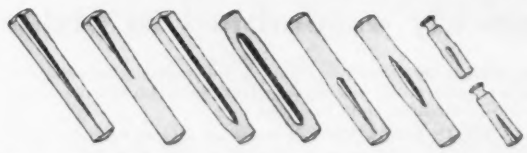


LET'S TALK

WOLVERINE TUBE
DIVISION OF
CALUMET & HECLA, INC.
17266 Southfield Road
Allen Park, Michigan
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

▲ For more details circle NED-274 E8 on enclosed inquiry slip ▲

GROOV-PINS
for ALL pin fastening needs



These versatile and flexible *solid* Groov-Pins are available in a variety of standard types, sizes, materials and finishes:

TYPES—Full length taper, half length taper, full length parallel, half length reverse taper, center, hopper feed, half length taper and reverse taper with annular grooves.

SIZES—Stock diameters from 1/32" to ½". Pin lengths from ⅛" to 4½."

MATERIALS—B1112 or C1212 cold drawn steel, SAE 6150 Chrome Vanadium steel, alloy steels. Stainless Steel 18-8, Type 303, Monel Metal, Brass, Bronze and other non-ferrous metals.

FINISHES—Cadmium or zinc electroplated. Other finishes are nickel, brass, black oxide and copper. Groov-Pins can be surface hardened or heat-treated, depending on material used.

SPECIAL GROOV-PINS with groove lengths and groove expansion—to solve your specific pin fastening problem—**can be made up at little or no extra cost, to your requirements or specifications.**

Whenever you need *specialized* pin fasteners, consult Groov-Pin!

SEND FOR SAMPLES, PRICES, COMPLETE INFORMATION

GROOV-PIN CORPORATION
1125 Hendricks Causeway, Ridgefield, New Jersey

Also manufacturers of Tap-Lok Inserts. | Representatives in principal cities throughout the U. S. A. | In Canada: Metal and Wood Fastening Devices Co., Valois, Montreal | TWX: Cliffside 26

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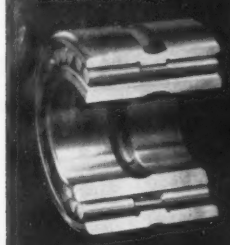
McGILL®

full complement capacity



plus guided rollers!

GUIDEROL®
PRECISION NEEDLE BEARINGS

With precision GUIDEROL bearings you can utilize full-complement capacity and retain the advantages of guided rollers to prevent binding under misalignment. Roller skewing is limited by the correcting action of a center guide rail on grooved rollers. Precision built throughout, GUIDEROL bearings are available in the MT and CT series interchangeable with ordinary needle bearings and cylindrical roller bearings.

Write for helpful bearing handbook No. H-54-B

McGILL® *precision needle bearings*

McGILL MANUFACTURING CO., INC.
101 N. LAFAYETTE ST. VALPARAISO, INDIANA

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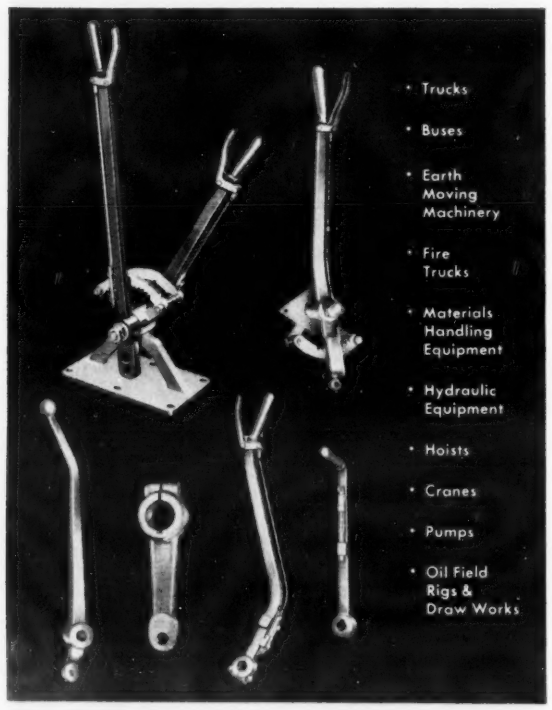
BATAVIA LEVERS
for machines and vehicles



standard, stocked forgings quickly assembled to order

NO SPECIAL ENGINEERING: Chances are there's a Batavia lever design that's either ready-made for your requirements or can be easily modified to fit the need.

NO SPECIAL FABRICATION: To meet an almost limitless number of design requirements without special dies and tooling, Batavia has developed *and stocks* an extensive line of standard upper and lower half assembly forgings, hubs, sub-levers and extensions. With all parts interchangeable, any upper half assembly forging may be joined with any lower half assembly forging or any sub-lever forging to produce the lever desired.

CONTROL UNITS, TOO: In addition to its full line of levers and lever assemblies, Batavia Metal Products also manufactures winch and transmission controls.

GET FULL DETAILS by mailing the coupon below.

BATAVIA METAL PRODUCTS CORP.
Batavia, New York
Mail your illustrated Lever Bulletin to us, without obligation.

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ADDRESS
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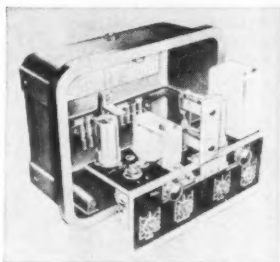
▲ For more details circle NED-278 E8 on enclosed inquiry slip ▲

LIQUID LEVEL CONTROL
designed for two-position control



Level of liquids with a dielectric constant of 80 or more, or a specific conductance of 4 micro-ohms or more can be controlled by the Type 2408W electronic liquid level control. Designed for two-position control, it has a normal 110-v operating voltage, but will perform satisfactorily between 95 and 135 v. It is easily changed from direct to reverse action by means of a switch. The three major subassemblies are control unit, up to 200-ft coaxial cable and sensing element. Operating components are housed in a cast aluminum case. The probe type sensing element has no moving parts and extends into the tank. Temperature limitations are −50 to 150° F at up to 2500 psi. An alarm version of the capacitance type controller (Type 2414W) is also available. Made by **Fisher Governor Co.**, Dept. NE-857, Marshalltown, Iowa.

▲ For more details circle NED-279 E8 on enclosed inquiry slip ▲

TUBE CUTTER & FLARING TOOL
packaged in steel carrying case

Cutting and flaring work on copper, brass, and aluminum tubing of 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, and 5/8-in. diameters can be performed with the tools in the No. 165 set, packaged in a steel case. Chrome-plated No. 161 tube cutter will cut 1/8 to 1-in. diameter tubing. Its permanently-attached reamer sets flush against the tool when not in use. Cadmium-plated No. 162 flaring tool has a drop - forged compressor that slides over the die block, and a hardened, floating cone gives an even, accurate flute and taper. Tools may also be purchased separately. Made by **J. H. Williams & Co.**, Dept. NED-5, 400 Vulcan St., Buffalo 7, N. Y.

▲ For more details circle NED-280 E8 on enclosed inquiry slip ▲

Thread Rolling Heads

National Acme Co.—Revised 20-page illustrated Acme-Fette Catalog NAF-57A depicts advantages of rolling threads from the end of the workpiece with self-opening thread rolling heads. These heads can be used on either rotating or nonrotating spindle machines, and are offered in capacities from 1/16 to 2 in.

▲ For more details circle NED-281 E8 on enclosed inquiry slip ▲

▲ For more details circle NED-282 E8 on enclosed inquiry slip ▲

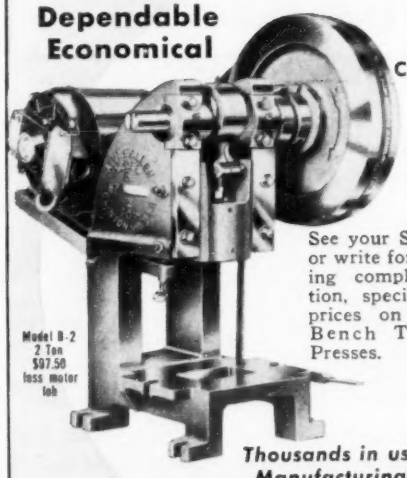
▲ For more details circle NED-283 E8 on enclosed inquiry slip ▲

Fully Guaranteed Moderate in Price

Heavy Duty Bench Type
ALLEN PUNCH PRESSES

Powerful
Dependable
Economical

164 Different Model Combinations



1 to 5 Ton Capacities

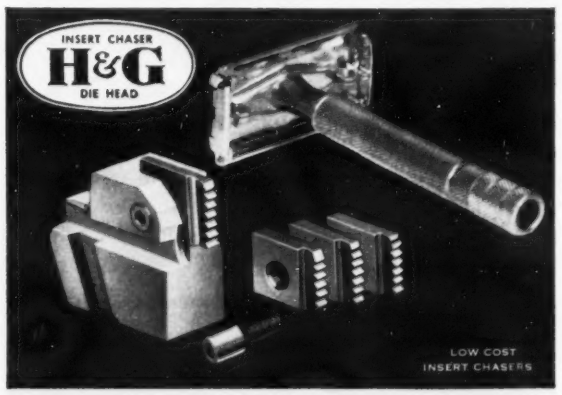
See your Supply Dealer or write for Catalog giving complete information, specifications and prices on our line of Bench Type Punch Presses.

Thousands in use by Leading Manufacturing Companies

ALVA ALLEN INDUSTRIES
Dept. NED, Clinton, Missouri

▲ For more details circle NED-284 E8 on enclosed inquiry slip ▲

DESIGNERS: HERE'S NEW DATA ON THREAD CUTTING



FOR LESS THAN $50 YOU GET 12 SETS, EACH SET GROUND READY TO GO

Men would not accept either idea at first . . .

INSERT CHASERS SAVE UP TO 33%

Insert chasers are like safety razor blades: they cost so little that you can throw them away when dull. Or, for utmost economy, you can resharpen them over and over again. Only a flash grind is required. For less than $50 you get a dozen sets of 3/4—16 insert chasers, each set ground ready to go. You will be amazed at the quantity of threads they will cut, even to Class 3 specifications, with a minimum of downtime. FREE: "Unified and American Screw Thread Digest"

THE EASTERN MACHINE SCREW CORPORATION
28-48 Barclay Street, New Haven, Conn.

▲ For more details circle NED-285 E8 on enclosed inquiry slip ▲

LINK-BELT Conveyor TROLLEYS

Ten reasons why they last longer

1. **WHEELS** machined from steel tubing are carburized and heat treated.
2. **BALLS** are high grade steel.
3. **CAGE** spaces balls accurately—minimizes friction.
4. **RACEWAYS** are precision-ground for free rolling action, high capacity.
5. **LARGE LUBRICANT SPACE** extends servicing schedules.
6. **END CLOSURES** fit tightly, prevent escape of lubricant.
7. **BOLT OR RIVET** is machined for tight press fit.
8. **PRESSURE TYPE GREASE FITTING** for fast, easy lubrication.
9. **LABYRINTH SEALS** are frictionless; keep lubricant in, dirt out.
10. **FORGED STEEL BRACKET** provides maximum strength.

RIVETED (shown) or BOLTED models

Book 2636 gives full details. Send for your copy today.

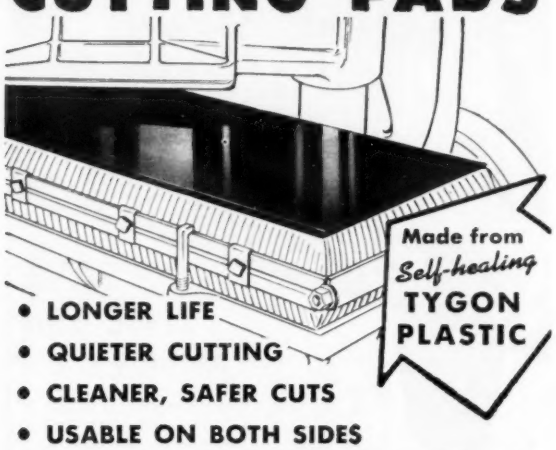
LINK-BELT

BALL BEARING CONVEYOR TROLLEYS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,794

▲ For more details circle **NED-286 E8** on enclosed inquiry slip ▲

CUTTING PADS



- **LONGER LIFE**
- **QUIETER CUTTING**
- **CLEANER, SAFER CUTS**
- **USABLE ON BOTH SIDES**

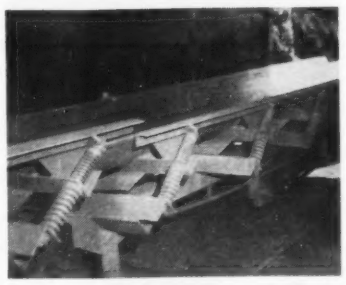
Colonial self-healing Cutting Pads on clicker machine or hand die cutting often double, even triple die life. Clean, sharp cuts, no bounce backs, no splinters. Use Colonial Cutting Pads to cut leather, rubber, plastics, candy, paper, fibre, cork, felt, cloth, light gauge metals. 68C-1

Write for Sizes, Prices — Address Dept. NED 558

COLONIAL RUBBER CO.
RAVENNA, OHIO

▲ For more details circle **NED-287 E8** on enclosed inquiry slip ▲

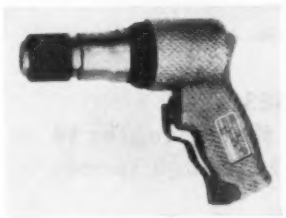
VIBRATING CONVEYOR
handles hot or bulk materials



Especially suited for handling extremely hot materials such as castings, sand, and other parts, this vibrating conveyor is fabricated entirely of iron and steel. Spring mounted, the trough conveyor uses 20-psi air to drive the vibrating mechanism. In one application, three-section unit moves 20-lb sprues over a distance of 35 ft at 220 per hour. It is also suited for moving granular and bulk parts, and will convey material uphill at an angle of 5 degrees. Made by **Cleveland Vibrator Co.**, 2744 Clinton Ave., Cleveland 13, Ohio.

▲ For more details circle **NED-289 E8** on enclosed inquiry slip ▲

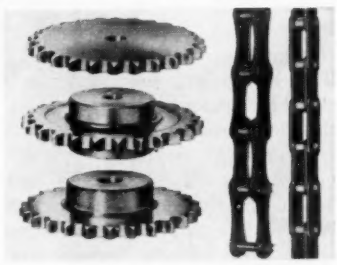
COMPACT AIR HAMMER
blows controlled to 3500 per min



Weighing only 3 lb and easy to manipulate, this 8 in. long, heavy duty, Model SP-600 air hammer operates on 11 cfm of air at 90 psi. Metering trigger controls speed from 0 to 3500 blows per minute. Safety chuck locks tools in any of six positions. Tool is usable for chipping, hammering, cutting, grooving, and many other operations. Price is $109.50. **Superior Pneumatic & Mfg. Inc.**, Dept. NE, 4758 Warner Rd., Cleveland 25, Ohio.

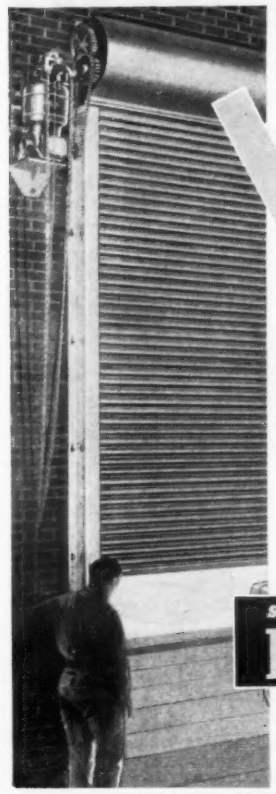
▲ For more details circle **NED-290 E8** on enclosed inquiry slip ▲

SPROCKETS & CHAIN
now embody 1/4 to 2-in. pitches



Steel and iron sprockets for 1½, 1¾, and 2-in. pitch chain have been added in the heavier duty size range of standard sprockets and chain. These include plate, single-hub, and double-hub types. Now available in the lighter duty range are steel plate sprockets (Type A) and sprockets with hub (Type B) for ½ to 1¼-in. pitch chain. Double-pitch roller chain in the three commonly used types have also been added. New types and sizes extend the line to cover any drive needs, light to heavy-duty, from ¼ to 2-in. pitch. Made by **Boston Gear Works**, 69 Hayward St., Quincy 71, Mass.

▲ For more details circle **NED-291 E8** on enclosed inquiry slip ▲



Save Space with

Kinnear Rolling Doors

Originated by Kinnear, the interlocking steel-slat door meets any door need—large or small, in old or new buildings. Opening upward, it coils above the lintel **inside or outside** the building. It offers solutions to almost any "headroom" problem. It needs no "reserved space" for opening or closing action—all floor and wall areas around the door are fully usable all the time. Manual or motor control. Write today for full details.

Saving Ways in Doorways
KINNEAR ROLLING DOORS

The KINNEAR Mfg. Co.
FACTORIES:
3017 Fields Ave., Columbus 16, Ohio
1742 Yosemite Avenue, San Francisco 24, Calif.
Offices and Agents in All Principal Cities

▲ For more details circle **NED-292 E8** on enclosed inquiry slip ▲

RAYMOND HYDRAULIC EQUIPMENT

PORTABLE ELEVATING TABLE

Positions work, supports long pieces, simplifies die handling. Telescopic and non-telescopic models. Capacity: 2,000 lbs.

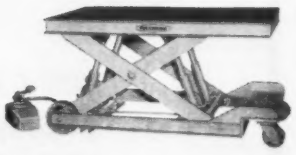
RAYMOND

LIGHTWEIGHT PALLET TRUCK

Rugged, maneuverable, 270° turning radius. Separate lift and lower pedals. Capacity: 2,000 lbs. 4,000 and 6,000 lb. cap. trucks also available.

RAYMOND

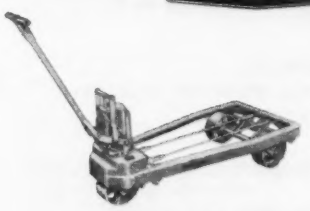
SHEET FEEDING TABLE



Raises sheets, strips to right working level. Increases production, makes work safer, easier. Capacities: 2,000 to 30,000 lbs.

RAYMOND

SKID TRUCK



Sturdiest skid truck made! 360° turning radius for close-quarter steering, plus finger-tip lowering. 3 cap.: 2,500; 4,000 or 6,000 lbs.

MAIL THIS COUPON

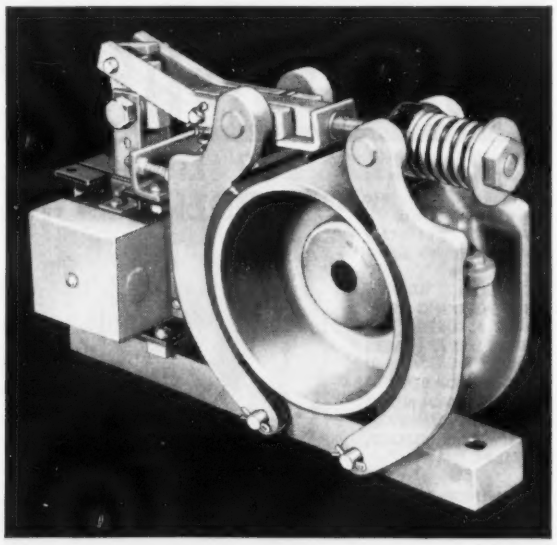
The RAYMOND CORPORATION
4130 Madison St., Greene, N.Y.

Please send Bulletins on RAYMOND Hydraulic Equipment checked below:

☐ 4,000 and 6,000 Lb. Cap. Pallet Truck
☐ Portable Elevating Table ☐ Sheet Feeding Table
☐ 2,000 Lb. Cap. Pallet Truck ☐ Skid Truck

NAME TITLE
COMPANY
STREET
CITY STATE

▲ For more details circle **NED-293 E8** on enclosed inquiry slip ▲



THREE GOOD REASONS WHY CUTLER-HAMMER 511 BRAKES ARE SO WIDELY PREFERRED

OEM DESIGN ENGINEER—"We've tested them all and standardized on Cutler-Hammer 511 Brakes. They're easier to install and our customers seem well satisfied too."

PLANT MANAGER—"Our conveyor system came equipped with Cutler-Hammer Brakes and they haven't given us a bit of trouble since the system went into operation."

MECHANICAL MAINTENANCE MAN—"As part of my job I service the brakes on our cranes and not only are the C-H solenoid brakes easier to adjust, but they hold their adjustment longer than any we ever had."

You, too, will find it pays to specify and install Cutler-Hammer 511 Solenoid Brakes. Available for either A-c or D-c service, Cutler-Hammer 511 Solenoid Brakes are rated from 3 to 125 lbs. ft. torque continuous duty and 3 to 160 lbs. ft. torque intermittent duty. Write today for Bulletin 511 for complete description, ratings, optional features, and dimensions. CUTLER-HAMMER Inc., 1377 St. Paul Avenue, Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto.

Standard features of design: Electrically released—spring applied • 180° of braking surface • Braking torque set by adjusting spring compression • Simple adjustment for lining wear and clearance • Design to NEMA standards • Interchangeable A-c and D-c mountings. **Optional features:** Manual release • Drip-proof cover • Water tight or dust tight enclosure.

CUTLER-HAMMER
MOTOR CONTROL
C-H

WHAT'S NEW IN MOTOR CONTROL? GET IT FIRST IN CUTLER-HAMMER

▲ For more details circle **NED-288 E8** on enclosed inquiry slip ▲

YOU CAN DEPEND ON

SPHERCO® BEARINGS and ROD ENDS

Quality SPHERCO Bearings and Rod Ends are precision built for superior performance

There are SPHERCO Bearings and Rod Ends for every application! There is a SPHERCO Engineer in your area to help you with your problems.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

You'll want full information on SPHERCO features... write today for this new catalog.

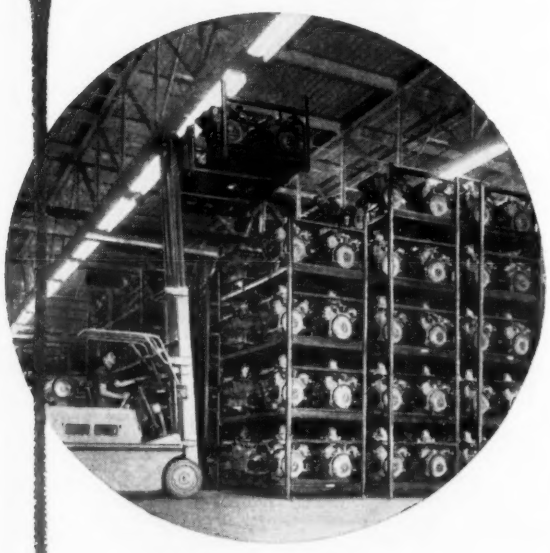
SPHERCO

A PRODUCT OF
SEALMASTER BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.
12 RIDGEWAY AVE. • AURORA, ILL.

For more details circle NED-294 E8 on enclosed inquiry slip

put your upper space to work!

get your materials off the ground with EMI RACKS



you can stack or ship anything in any industry on EMI RACKS

WELL STACKED

COMPLETE
METAL WORKING FACILITIES
INCLUDING . . .

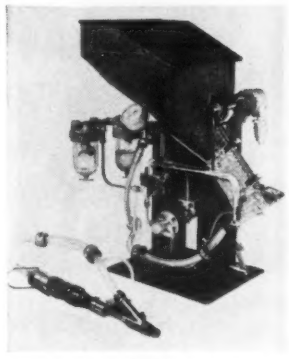
TUBING—Square, Round, Rectangular and special shapes
WIRE MESH—All Gages
SPECIAL FABRICATIONS

Write
for complete catalog!

EQUIPMENT MFG. INC.
21566 HOOVER ROAD
DETROIT 5, MICHIGAN

For more details circle NED-295 E8 on enclosed inquiry slip

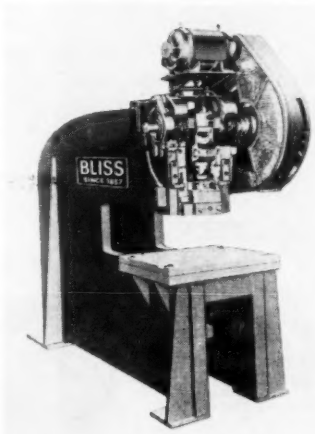
THREADED FASTENER DRIVER can be used at any angle



All types of standard commercial screws, including those with preassembled washers, are driven by the Jet-Setter, a screwdriving machine which extends the operations performed by Pneuma-Serve equipment. It incorporates a tapered or conical, plastic - covered head which drives the fasteners in confined locations. Usable at any angle, the device prevents marring of highly finished surfaces. The Jet-Setter is adaptable to all types of power screwdrivers and permits only one screw at a time to feed from supply hopper to the driving head. Once the previous screw has been driven, the next is blown through the transparent plastic tube to the three-jawed screw holder. Available from **General American Transportation Corp.**, Parker-Kalon Div., 2 Peekay Dr., Clifton, N. J.

For more details circle NED-296 E8 on enclosed inquiry slip

DEEP-THROAT PRESSES have 12 to 34-in. throat depths to stamp wide sheets at high speeds



Two bench models with 4 and 7-ton capacities and six floor models with 10 to 60-ton ratings comprise this line of deep-throat presses. They are designed for high speed punching, cutting, and forming on large, wide sheets. Parts are interchangeable with Bliss bench and inclinable presses of similar tonnages.

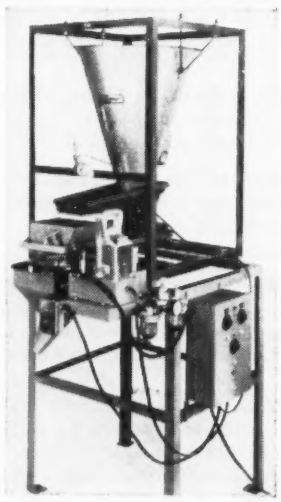
Throat depth varies from 12 in. on the smallest bench model to 34 in. on the largest floor model. Operating speed is 90 to 195 stampings per minute. Design features include stress-relieved frames, rolling key clutch, extra-long gibs to support the slide at all positions, and forged steel crankshafts.

Flanged sides, semiautomatic or automatic lubrication, air friction clutches, and spring or air counterbalances are options. Presses with 22 to 60-ton capacities can be single-geared or not-geared, and are offered with an adjustable stroke range. Made by **E. W. Bliss Co.**, 1376 Raff Rd. S.W., Canton 10, Ohio.

For more details circle NED-297 E8 on enclosed inquiry slip

NET WEIGHING MACHINE

provides constant visible check on package weight



Equipped with Exact Weight precision scale, magnified dial for easy visibility, quick and accurate adjustment. Eliminates spot checking. Vibratory feed has two speeds, fast to trickle, to assure accurate fill. Weigh hopper is air-cylinder operated. Model 620 NW has 10 lb. capacity; 610 NW, 3 lb. Other types of weigh feeders, sackers and precision scales available in any capacity for every weighing and check-weighing job. Write for Bulletin 3318.

Find us in your local 'Yellow Pages'

Sales and Service Coast to Coast

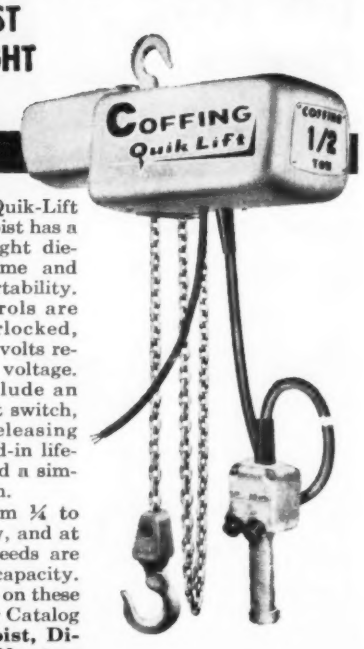
THE EXACT WEIGHT SCALE CO.
930 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: P.O. Box 179, Station S, Toronto 18, Ont.

BETTER QUALITY CONTROL . . . BETTER COST CONTROL

For more details circle NED-298 E8 on enclosed inquiry slip

NEW Coffing Quik-Lift

ELECTRIC HOIST IS LIGHTWEIGHT BUT STURDY



The new Coffing Quik-Lift coil chain electric hoist has a strong but lightweight die-cast aluminum frame and housing for easy portability. Push-button controls are mechanically interlocked, and operate on 115 volts regardless of motor voltage. Other features include an easily-adjusted limit switch, instantaneously releasing V-type brake, sealed-in lifetime lubrication, and a simplified wiring system.

Models range from ¼ to two tons in capacity, and at least two lifting speeds are available in each capacity. For full information on these new hoists, write for Catalog AD-65. **Coffing Hoist, Division of Duff-Norton Company, 803 Walter Street, Danville, Ill.**

For more details circle NED-299 E8 on enclosed inquiry slip

Ferance PRODUCTS

BEAM COMPASS

Actual size courser with 9/16" x 9/32" beam section.

SAVE TIME and MONEY

Beam lengths from 7" to 72" . . . one piece anodized aluminum.

- Choice of colors in attractive plastic coursers with metal inserts at all wear points. Nylon coursers now available.
- 3 sets available, individually priced from $3.25 (15% quantity discount on 3 sets or more).
- Sets in attractive boxes with segmented 9¾" long, aluminum or wood beams . . . lock firmly together.

Send For Circular and Price List Today

FERANCE Construction Co.
28 Woodside Drive • Penfield, N. Y.

For more details circle NED-300 E8 on enclosed inquiry slip

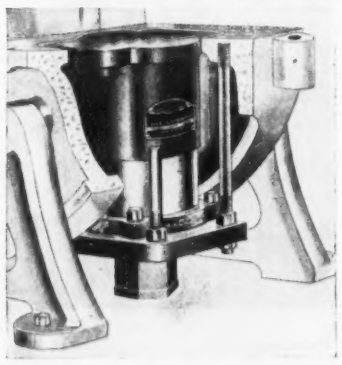
DIE CUSHIONS

FOR ALL DEEP DRAWING OPERATIONS

Furnished complete ready to install. Operates perfectly on all shop air lines.

ACCURATE ADJUSTABLE WORKING PRESSURES ASSURED
QUICK SETUP SAVES TIME
PRESS BED OR BOLSTER PLATE MOUNTING
17 MODELS AVAILABLE FROM STOCK, SIZES 3" THRU 16"

DIE CUSHIONS AVAILABLE FOR ANY POWER PRESS
ENGINEERING SERVICE AT YOUR DISPOSAL
ALL DIE CUSHIONS INSTALLED ON TRIAL BASIS



Full Universal Pneumatic Die Cushion

DAYTON ROGERS *Manufacturing Company*

MINNEAPOLIS 7E, MINNESOTA

For more details circle NED-301 E8 on enclosed inquiry slip

TENAC Spray, the easy way to lubricate gears and cables. Just press the button. Grease hard to reach spots without even soiling your hands.

TENAC Spray applies an even coat of tough, black TENAC grease. The more you abuse it, the tighter it clings. It won't dry, crack, flake or peel. It sheds water. And it stays oily, keeps its lubricating power.

Call your Houghton man for a demonstration. Or write E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

TENAC... a product of

E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service...

▲ For more details circle NED-302 E8 on enclosed inquiry slip ▲

Cold-rolled high carbon

SPRING STEEL

• National-Standard Company's ATHENIA STEEL DIVISION produces many types of strip steel to precision specifications . . . temper, finish, color, edge, forming characteristics, uniformity, tolerance, etc. Products include flat steels in widths up to 6½" tempered and 16" cold rolled or annealed; thicknesses from .001 to .065, depending on width.

Write to Athenia for complete information on what we can provide and on our facilities for development of new or special steel.

Athenia Steel Division, Clifton, New Jersey

NATIONAL STANDARD

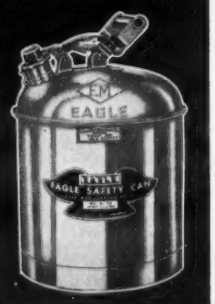
▲ For more details circle NED-303 E8 on enclosed inquiry slip ▲

For Safety, Here Are RUGGED CANS!

Listed and labeled by Underwriters Laboratories and Factory Mutual

THE COMPLETE LINE

Trigger Type
1 qt., 2 qt., 1 gal.



Free-Swing Type
2½ and 5 gal.

- Strong quality construction
- No waste, no splash, no spill
- Self-adjusting guard cap prevents leak
- Safe for handling flammable liquids

Order from your supplier or write for information

Complete Eagle Catalog is available free

Eagle products are also sold in Canada

EAGLE MANUFACTURING COMPANY
Wellsburg, W. Va.
Serving Industry Since 1894

▲ For more details circle NED-304 E8 on enclosed inquiry slip ▲

INDICATING FLOWMETERS
for air, gases, and liquids

Enlarged and improved line of air, gas, and liquid indicating flowmeters is available with aluminum and brass bodies for up to 2000 psi, and with special body materials for corrosive applications. Scale ranges run from 0 to 6 gph up to 0 to 6000 gph. Series 1050 gas flow models have scale ranges from 0 to 30 cfh up to 2400 to 60,000 cfh. Meters are installed directly in flow lines for ranges up to 20 gpm or 50 cfm. Larger scale ranges use shunt arrangements. Gas flow instruments have a gear-driven pointer with 4½ or 6-in. round dials and 180 or 240-degree scales. All instruments are hermetically sealed, can be installed vertically or horizontally, and are unaffected by vibration. Made by **Eclipse Fuel Engineering Co.**, Seico Instrument Div., 1002 Buchanan St., Rockford, Ill.

▲ For more details circle NED-305 E8 on enclosed inquiry slip ▲

SUBMINIATURE RELAYS
feature snap contact action

Internal features of Series 33 subminiature relays include snap-action switching and double spiral springs. Former eliminates "floating contact" and assures high impact and contact wipe. The double spiral spring is nonresonant over 0 to 3500-cps frequency range. Made by **Phillips Control Corp.**, Dept. NED, Joliet, Ill.

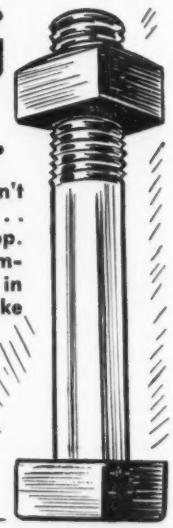
▲ For more details circle NED-306 E8 on enclosed inquiry slip ▲

TOGGLE CLAMPS
holding pressures to 1650 lb

Holding pressures up to 1650 lb are produced by eight Huskies added to the De-Sta-Co line of toggle clamps. Designed for such heavy duty uses as body-bucks, clamps are available in the low-silhouette-handle Series 527 and the vertical-handle and horizontal bar Series 528. Former is used when overhead work-clearance is a factor. Four models in each series differ only in the type of base, having flanged-horizontal, flanged-vertical, or plain mounting surfaces. Other features include forged alloy steel bases, replaceable components, serrated hardened bushings, and staked rivets at pivot points. Made by **Detroit Stamping Co.**, 360 Midland Ave., Detroit 3, Mich.

▲ For more details circle NED-307 E8 on enclosed inquiry slip ▲

BIGGEST THING in YOUR SHOP...



When some rusty bolt or shaft won't let go and it is tying up production . . . it can be the biggest thing in your shop. That is when Kano Kroil, the new chemical loosener, is worth its weight in gold. As one customer put it, "It's like an extra employee."

. . . "Five men, total weight of 825 pounds, using levers and sledges, struggled for an hour with a frozen shaft. No luck. So all went out for a smoke. One man, weighing 140 pounds used Kroil and by the time we returned, had lifted the shaft out with no leverage."

You Too Can Get This Result

Try Kroil at our risk. If it doesn't do more than you expect, return it and the charge will be cancelled. Get the Kroiler combination, one gallon of Kroil (regular price $4.00) and Kroiler squirt gun for $4.95 f.o.b. factory. Order direct.

KANO LABS. 1074 S. Thompson Lane Nashville 11, Tennessee

▲ For more details circle NED-308 E8 on enclosed inquiry slip ▲

SEALMASTER BALL BEARING UNITS
for Quality, Service, Delivery and Complete Line!

SEALMASTER Ball Bearing Units contain a combination of patented features, you will find in bearing units of no other make. These features have been responsible for SEALMASTER'S leadership in the mounted bearing unit field. They are important to you in the equipment you build, buy or operate. Insist on SEALMASTER!

SEALMASTER BALL BEARING UNITS

BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.
12 RIDGEWAY AVENUE
AURORA, ILLINOIS

▲ For more details circle NED-309 E8 on enclosed inquiry slip ▲

GOODYEAR TIRES

Look for this sign; there's a Goodyear dealer near you.

LIFT THAT BALE

These Tires keep your equipment rolling!

ALL-WEATHER TREAD —for ramps, wet surfaces and other extra-traction conditions

ALL-SERVICE XTRA CUSHION —built with compact lug design for fast, easy rolling with greater smoothness and stability

SMOOTH-TREAD —for factory, warehouse and loading platform

GROOVED TREAD —built to take heavy punishment on big trucks

It takes good equipment and a skilled operator to move heavy fabric bales like these. And it takes something else. Rugged Goodyear Solid Industrial Tires like those you see in the picture.

They're made with tougher compounds to reduce cutting, chipping, tearing — insure lower tire cost. You save equipment down time, because Goodyear Industrial Tires are designed to absorb more shock, give longer life to equipment. Costly floor damage is reduced, too, because the resilient rubber in these tires effectively cushions the loads.

If you've got a tough materials handling job to do, you'll do it better on Goodyear Industrials. Your Goodyear dealer will be glad to job-fit the tire for you. Goodyear, Industrial Tire Sales, Akron 16, Ohio.

Use the Right Tire for the Job — Buy and Specify

GOODYEAR INDUSTRIAL TIRES
All-Service, All-Weather, Xtra Cushion —
T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

▲ For more details circle NED-310 E8 on enclosed inquiry slip ▲

THERE'S NO SUBSTITUTE FOR EXPERIENCE...

YESTERDAY - TODAY - TOMORROW

JUST ONE QUALITY... THE FINEST!

KESTER SOLDER

Industry-tested and proved for over 50 years . . . There's no substitute for regular on-the-job applications to prove the actual merits of a product like solder. That's why Kester Solder is the preferred choice of wise solder buyers and users everywhere.

YOURS FREE! The Kester 78-page textbook "Solder . . . Its Fundamentals and Usage."

KESTER SOLDER COMPANY

4249 Wrightwood Avenue • Chicago 39, Illinois

Newark 5, New Jersey — Brantford, Canada

▲ For more details circle **NED-312 E8** on enclosed inquiry slip ▲

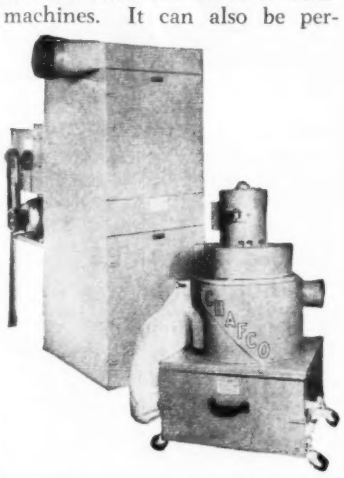
FIVE-DIGIT PRINTING COUNTER
makes up to 500 counts per minute

Printing action of this compact, five-digit counter can be initiated by pushbutton on the unit or by remote contact. It is automatically reset to zero after each impression or it can provide cumulative totals. Device can make up to 500 counts per minute, printing the total instantly on a tape. If the printing action is an alternating current pulse, the rectifier in the unit will change it to direct current. Unit operates on 110-v, provided by a self-contained power supply. The tape can be advanced manually for viewing. Additional counter for simultaneous printing on the tape, equipment for printing time and date with the count, and printing of code letters and numbers can be added. Made by **Royson Engineering**, Hatboro, Pa.

▲ For more details circle **NED-314 E8** on enclosed inquiry slip ▲

DUST COLLECTOR
portable unit has 420 cfm capacity

Mounting on easy-rolling casters, the Model A-1 Spiraclone portable dust collector can serve a number of independent machines. It can also be permanently installed or placed on a wall shelf to conserve floor space. Dust-laden air is drawn through a 4-in. inlet at 4800 fpm. Dust particles separated by centrifugal force are retained in an enclosed dust pan, and clean air is discharged through a fabric filter bag. Over-all size of the $175 unit is 18 x 18 x 36 in. Capacity is 420 cfm with ½-hp motor. A model with a 1-hp motor and a higher capacity blower is also offered. Also illustrated is the Model 312 Spiraclone with a 5000-cfm capacity. Made by **Chicago Air Filter Co.**, 3723 Grand Blvd., Brookfield, Ill.

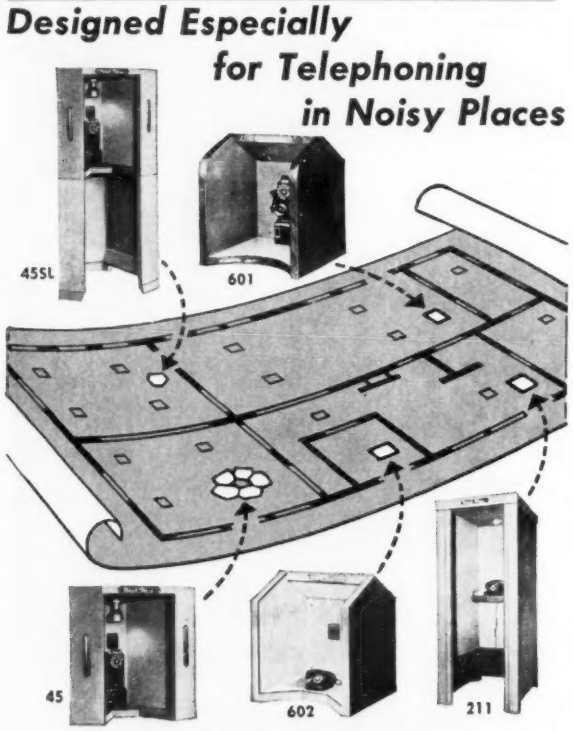


▲ For more details circle **NED-315 E8** on enclosed inquiry slip ▲

Vibratory Feeders

Syntron Co.—Vibra-Flo vibratory feeders are made in types and sizes to handle practically any bulk material. Rate of flow is readily controlled by rheostat or reactor. Full information is given on these units in 32-page bulletin.

▲ For more details circle **NED-316 E8** on enclosed inquiry slip ▲



Designed Especially for Telephoning in Noisy Places

BURGESS-MANNING
"Hear-Here"
ACOUSTI-BOOTH
(The Original Isolation Booth)

Here is the telephone booth that is more than "just a booth." It effectively shuts out extraneous noises in the most critical spots to permit telephoning in the comfort and quiet of home. Many years of acoustical research and development experience is built into every "Acousti-Booth" — and in design careful consideration has been given to the dictates of modern architecture. The "Acousti-Booth" is doorless and never harbors a foul odor — its open, simple design discourages deposit of rubbish — and maintenance is no problem. The "Acousti-Booth" belongs in every commercial building, institution, hospital, school, air and rail terminal, store, and other locations having a heavy traffic and noise condition — specify Burgess-Manning "Hear-Here" Acousti-Booths in all your plans for most effective telephone comfort.

Performance Guaranteed

For complete description and prices on all models, send for Bulletin A-142-2D

3 Heating Cooling Acoustical

BURGESS-MANNING COMPANY

Architectural Products Division

5970 Northwest Highway, Chicago 31, Ill.

▲ For more details circle **NED-313 E8** on enclosed inquiry slip ▲

EXPERIENCE SINCE 1894

Built into **American Beauty** ELECTRIC SOLDERING IRONS

◈ Since 1894 we have been designing, manufacturing and constantly improving our electric soldering irons! Today, no matter what the requirements, there's an American Beauty in the right model, correct tip size and proper watt input to do any soldering job quickly, properly, efficiently.

TEMPERATURE REGULATING STAND

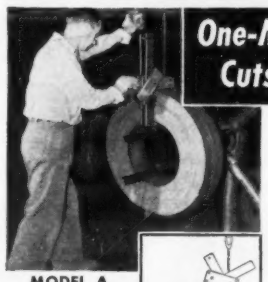
◈ An automatic device for controlling tip temperature while iron is at rest. Prevents overheating of iron and eliminates frequent retinning of tip, while at same time maintaining it at any temperature that may be desirable or necessary.

Write for 16-page illustrated catalog containing full information on our complete line of electric soldering irons—including their use and care.

AMERICAN ELECTRICAL HEATER COMPANY

173-G DETROIT 2, MICHIGAN

▲ For more details circle **NED-317 E8** on enclosed inquiry slip ▲

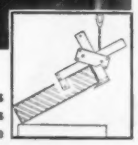


One-Motion Reel Loading Cuts Time and Costs!

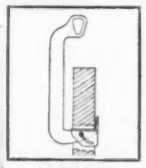
DIXON
One-Man COIL GRAB

The Dixon Coil Grab saves labor and speeds coil handling by enabling one man to lift, turn and load coil on the stock reel with a single, easy motion. Forged steel wedge speeds separation of stacked coils. Positive grip and support eliminate coil damage, assure operator safety. Standard models available from stock. Capacities from 1,000 to 5,000 and 10,000 to 15,000 lbs., for coil widths ¼" to 48".

ALL MODELS AVAILABLE FROM STOCK



MODEL A COIL GRAB Wedge separates coils easily. Lifts and turns in one motion.



MODEL H COIL HOOK Pivoting shoe supports, turns, and locks coil in position in one motion.

FREE BULLETIN Illustrates standard models and shows how to handle all coil sizes safely, rapidly, without damage. Write for it today.

DIXON

DIXON AUTOMATIC TOOL, INC.
2302 — 23rd Avenue
ROCKFORD, ILLINOIS

AUTOMATIC PARTS HANDLING AND ASSEMBLY EQUIPMENT

▲ For more details circle **NED-318 E8** on enclosed inquiry slip ▲

Increased Insulation

BETTER CONNECTIONS

JONES BARRIER TERMINAL STRIPS

Leakage path is increased — direct shorts from frayed terminal wires prevented by bakelite barriers placed between terminals. Binder screws and terminals brass, nickel-plated. Insulation, BM 120 molded bakelite. Finest construction. Add much to equipment's effect.

Jones Means Proven Quality

Illustrated: Screw Terminals—Screw and Solder Terminals—Screw Terminal above Panel with Solder Terminal below. Every type of connection.

Six series meet every requirement: No. 140, 5-40 screws; No. 141, 6-32 screws; No. 142, 8-32 screws; No. 150, 10-32 screws; No. 151, 12-32 screws; No. 152, ¼-28 screws.

Catalog No. 21 lists complete line of Barrier Strips, and other Jones Electrical Connecting Devices. Send for your copy.

Jones

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

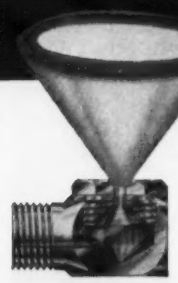
▲ For more details circle **NED-319 E8** on enclosed inquiry slip ▲

Spray Nozzles

A Complete Selection for **INDUSTRIAL APPLICATIONS**

Whether you need hard-hitting sprays for cleaning or degreasing applications or soft, misting sprays for wetting or dust settling, Delavan nozzles will improve your spraying process. Write today for catalog #33 and price index D-33A for complete details on Delavan spray nozzles.

Catalog 33 — twenty-eight pages of nozzles, rating tables and application data to help you.



Type WR Hollow cone nozzle

DELAVAN *Manufacturing Company*
WEST DES MOINES, IOWA

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● Half the weight of aluminum, chemically inert, electrically safe, mechanically strong . . . Farlite Postforming Laminates deserve your design consideration! Available in paper or fabric base, 1/32" to 1/4" thickness. FREE CATALOG!

FARLITE
PLASTICS DIVISION
FARLEY & LOETSCHER MFG. CO.
DUBUQUE, IOWA

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ELECTRAN

Multi-Purpose Step-Down TRANSFORMERS

. . . one transformer or a HUNDRED

Same day delivery from our stock. From 0.1 to 5.0 K.V.A. Ten standard types plus special variations to meet your specific conditions. A transformer you can depend on from a maker you can depend on!

(We have never yet been notified of a field failure of any of these units unless overloaded or otherwise incorrectly used.)

Write for bulletin 47D

ELECTRAN MFG. CO.
1901 CLYBOURN AVENUE • CHICAGO 14, ILLINOIS

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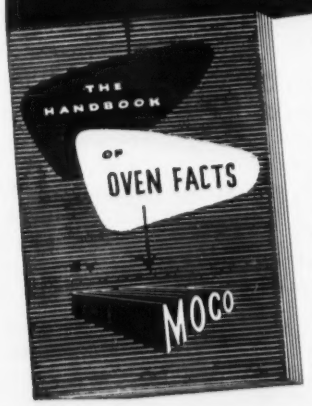
FREE!

If heat processing is your job— don't miss this "idea-packed" booklet



Never before have so many sound basic ideas on heat processing been available under one cover.

Written by engineering experts at Michigan Oven Company, it offers practical suggestions on what to look for in an oven regardless of your application.

Why not send for "The Handbook of Oven Facts"? It may be the most important decision you make today! Or, if you have a specific application, a MOCO representative will be pleased to call.

MICHIGAN OVEN COMPANY
419 Brainard, Detroit 1, Michigan

▲ For more details circle NED-323 E8 on enclosed inquiry slip ▲

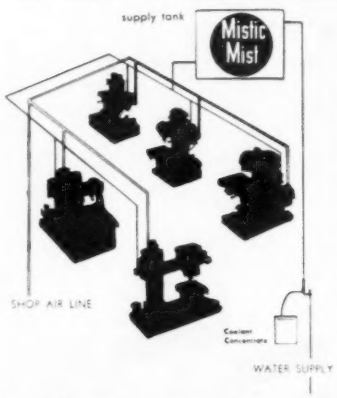
WHITEPRINTING MACHINE handles materials up to 42 in. wide

Improved Printmaster 810 whiteprint machine accommodates engineering and architectural drawings, business forms, and other materials up to 42 in. wide and any length. Printing and developing speeds are synchronized to 40 fpm. Brush feed assembly prevents curled edges or folded corners on originals improperly fed into the machine. Selector control lets operator pick off prints before development. Cylinder temperature of 50-60° F above room temperature allows processing of plastic-coated materials and foils. Made by **General Aniline & Film Corp.**, Ozalid Div., 14 Corliss Lane, Johnson City, N. Y.

▲ For more details circle NED-324 E8 on enclosed inquiry slip ▲

MIST COOLANT SYSTEM supplies any number of machines

Premixed coolant is supplied to any number of machines from a single source of supply by the gravity-feed type Mistic Mist centralized coolant system. Individual control valves are mounted on each machine for precise control of air and coolant mixture. Control valves can be used singly or in banks for manual or automatic control, with unlimited number of outlets. Nozzles of 45 or 90 degrees, or straight types are available. A 3/16-in. size is adaptable to cooling close to cutting edge of tool. Injector valve on water supply line allows supply tank refill from floor level. Made by **Aetna Mfg. Co.**, Dept. ND, 188 S. York St., Bensenville, Ill.



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Three-Dimensional Flight Simulator

Bendix Aviation Corp., Bendix Computer Div.—Testing of missiles, aircraft navigational systems, and associated components is performed relatively inexpensively with the Bendix 3-Dimensional Flight Simulator described in 24-page bulletin. System reduces or eliminates the need for trial flights in "debugging" airborne equipment.

▲ For more details circle NED-326 E8 on enclosed inquiry slip ▲

IT COSTS LESS TO USE THE BEST!

PLS

1. Takes less PLS to give a perfect seal.

2. One compound for many services: water...oil...gas...steam...chemicals...petroleum products...refrigerants—low and high pressures.

3. Never washes out—one application lasts forever.

4. Never hardens: joints may be easily broken after years of service—no damaged connections.

Prove it to yourself. Send for a free sample. Crane Packing Co.
6411 Oakton St., Morton Grove, Ill. (Chicago Suburb).

JOHN CRANE CRANE PACKING COMPANY
In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.

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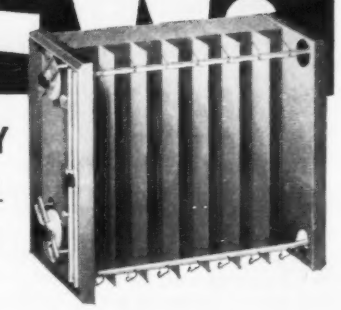
NEW!



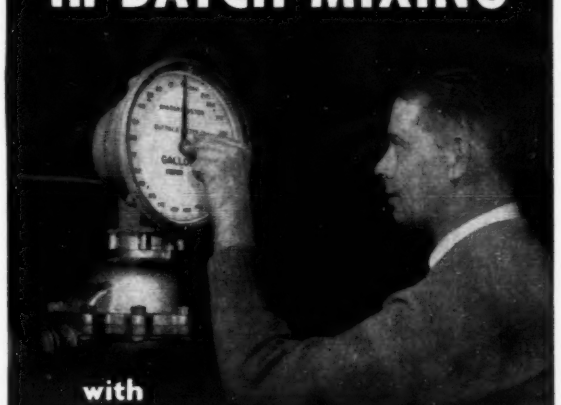
HIGH-VELOCITY Electro-CELL ELECTROSTATIC AIR FILTER!

Here's the latest from AAF! The new High Velocity Electro-CELL electrostatic precipitator, designed to operate at face velocities up to 600 fpm, offers definite space savings over conventional precipitators—30% reduction in face area and 50% reduction in cubic requirements. And this unit is also 16% shallower than other high velocity units! Cell construction for simplified installation and ease of maintenance. Write today for Bulletin No. 258.

AAF American Air Filter COMPANY, INC.
391 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

▲ For more details circle NED-328 E8 on enclosed inquiry slip ▲

ELIMINATE ERRORS in BATCH MIXING



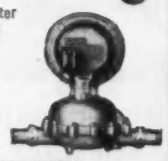
with NIAGARA Automatic Displacement Meters!

SET FOR 175 gallons— GET 175 gallons

Uniformity of a liquid product depends on accurate measurement of all ingredients from batch to batch. You can be sure of consistent accuracy by equipping with Niagara Electri-contact Meters. A precision electric Switch closes or opens an electric circuit after the passage of a predetermined quantity of liquid through the meter. Can also be used to generate electrical impulses to actuate other control mechanisms . . . shut off a pump motor . . . signal visually or audibly to the operator. Brings automation to liquid control and measurement in hazardous or non-hazardous atmospheres.

Begin now to lower your liquid measuring costs and have the assurance of positive accuracy. Mail coupon for complete information.

Chemical Meter with inclined register.



Rear View, Explosion Proof Meter.

BUFFALO METER CO.
2903 MAIN STREET • BUFFALO 14, NEW YORK

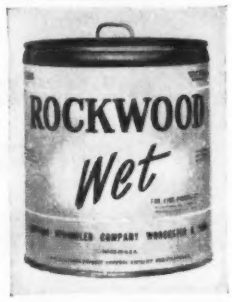
Please send me complete information on the use of economical NIAGARA METERS, based on the data below:

Liquid..... Pressure.....p.s.i.
Temp.....°F.
Flow rate.....g.p.m.
Maximum batch.....gals.
Name.....
Company.....
Address.....

▲ For more details circle NED-329 E8 on enclosed inquiry slip ▲

ROCKWOOD WET

makes water wetter, to put out fires **FAST**



Rockwood WET saves time . . . saves water . . . saves money. That's a strong statement but Rockwood WET is proving it's true in countless cases. Here's how —

It saves time and water because one part Rockwood WET mixed with 99 parts water increases penetration and extinguishment action is faster.

It saves money because less manpower, less equipment, less water and less time are used in extinguishing deep seated fires.

For industrial applications, too, Rockwood WET has helped solve many problems. For instance, added to water and sprayed on large dusty open areas, it keeps the dust problem under control. Send for booklet on Rockwood WET now to:

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

Portable Fire Protection Division

2132 HARLOW STREET, WORCESTER 5, MASSACHUSETTS

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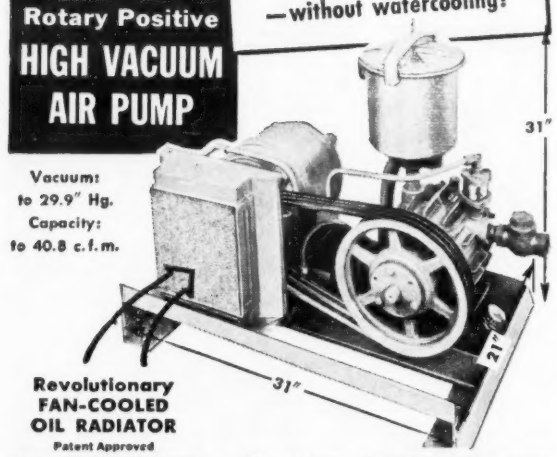
LEIMAN Rotary Positive HIGH VACUUM AIR PUMP

Operates at 140° F. —without watercooling!



Vacuum: to 29.9" Hg.
Capacity: to 40.8 c.f.m.

Revolutionary FAN-COOLED OIL RADIATOR
Patent Approved

continuously circulates pre-cooled oil through pump, reduces heat on pump parts, prevents overheating and jamming. Oil provides seal for vacuum. Lower temperature eliminates oil vapors, permits speeds up to 800 rpm., provides greater capacity in a smaller pump.

The Leiman air-cooled high vacuum pump eliminates bulky, high-priced pumps and complicated water pipe hookups—may be placed anywhere. Provides continuous high vacuum 24 hours a day, without overheating. Pump has steel wings, cast iron cylinders and patented automatic wing adjuster to assure leakproof wing-to-wall seal for life. WRITE for 16-page catalog and valuable "how-to-do-it" application book.

LEIMAN BROS., INC. 167 Christie St., Newark 5, N. J.
Established 1887

▲ For more details circle NED-331 E8 on enclosed inquiry slip ▲

QUICK CLEAN RELEASE for RUBBER MOLDS

IMS

PURE SILICONE MOLD LUBE

Clean • Concentrated!

The economical way to apply costly silicone to all quality rubber molds. Quick, too! Save cycle time with handy pressurized dispenser.

PRICES (Delivered)

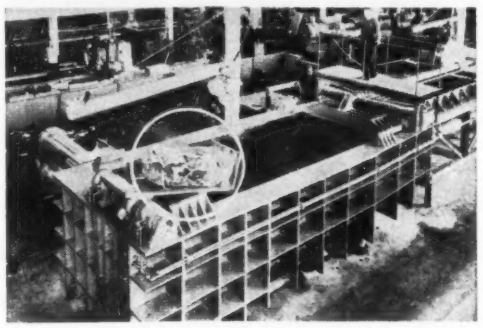
1 to 11 Cans, ea. . .	$2.00
Unbroken Doz. .	$18.00
Unbroken Gross .	$197.40

INJECTION MOLDERS SUPPLY CO.
3514 LEE ROAD • WYoming 1-1424 • CLEVELAND 20, OHIO

▲ For more details circle NED-332 E8 on enclosed inquiry slip ▲

SCRAP BALING PRESS produces 16 x 24 x 60-in. bale

Large enough to compress an entire automobile (less engine and axles) into a bale of about 16 x 24 x 60 in. in 1½ min after charging, the Duomatic baler pro-

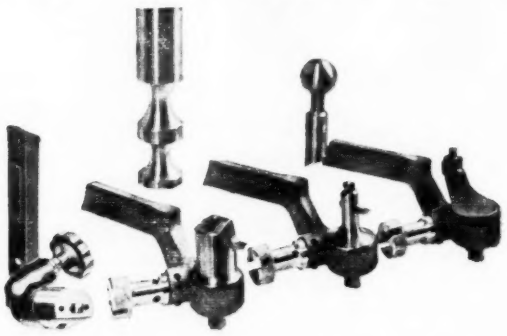


duces bales with an average density of 140 lb per cubic foot. The hydraulic scrap press is self-contained and can be mounted on a simple foundation. Maximum hopper capacity is 963 cu ft. A gathering ram exerts a force of 804,000 lb to compress the load into a small front area. A second ram moves in from the side to further compress the scrap with a force of 1,257,000 lb. Door and gathering ram are designed to operate on half-cycle to reduce time required to bale dense scrap. Made by Wheland Co., 1500 Signal Mountain Rd., Chattanooga, Tenn.

▲ For more details circle NED-333 E8 on enclosed inquiry slip ▲

RADIUS-CUTTING TOOLS for bench, floor, and engine lathes

Shank and body of Shaplane precision radius tools are a one-piece steel casting with enclosed bearings and gears to prevent entry of chips, grit, or foreign matter.



Their design eliminates strain from the worm and worm gear. Fairly heavy cuts can be made without damage, and radii can be cut without chatter. Tools are made for 9 to 13-in. bench, floor, and engine lathes in the following types: No. 5 convex for cutting a ¼ to 13/16-in. radius (1⅝-in. diameter ball); No. 6 concave for cutting a ⅜ to 1-in. radius; and No. 7 concave for cutting a ¾ to 1½-in. radius. Shanks are ⅜ x 1 x 4 in. Made by C. B. Teeter, 4470 Oakenwald Ave., Chicago 15, Ill.

▲ For more details circle NED-334 E8 on enclosed inquiry slip ▲

PALMGREN

GET THIS FREE CATALOG on Work Holding Tools NOW!

Used in all industries . . . everywhere

This catalog shows the most complete line of work holding tools available anywhere for production on milling machines and drill presses . . . angle vises . . . drill press vises . . . swivel machine vises . . . adjustable angle plates with or without swivel bases . . . production vises . . . heavy duty angle vises . . . rotary and indexing tables for use on milling machines and drill presses . . . milling attachments for milling on lathes.

There are 68 different models and types of Palmgren vises, rotary tables, milling attachments and other machine tool accessories, with jaw sizes from 1½" to 8". Ask for your copy of this FREE Catalog No. 205 today, showing the complete line, details and prices.

125

CHICAGO TOOL and ENGINEERING CO.
8378 SOUTH CHICAGO AVE. • CHICAGO 17, ILLINOIS

▲ For more details circle NED-335 E8 on enclosed inquiry slip ▲

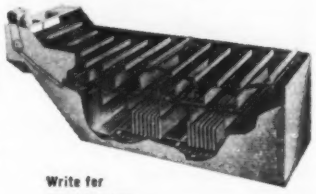
Filters Heavy Loads

Delpark Filter-Matic

Dual Manifold, Vacuum Leaf Type Filter

WITH DOUBLE DRAG-OUT

- For heavy solids volume on continuous, automatic filtering operation.
- Leaf type filtering elements have greater filter surface area, higher filter flow.
- 2 expeller flight systems (optional) remove floating contaminants and solids blown from filter elements during cleaning.
- One manifold filters while the other backwashes.



Write for new literature on Dual Manifold Filters

Delpark —First in Filtration Advancement

INDUSTRIAL FILTRATION COMPANY
14 INDUSTRIAL AVE. LEBANON, INDIANA

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thanks to XEROGRAPHY...

Frank W. Springsteen, left, senior planning delineator, shows Joseph F. Reilly, director of office services in N. Y. State's department of public works, the high quality and contrast of an 11" x 17" reduction run off on an offset duplicator from a paper master prepared xerographically from a 22" x 34" drawing.

New York State is saving $120,000 yearly on

- HIGHWAY CONSTRUCTION PLANS
- SPECIFICATION BOOKS
- PREPRINTED FORMS OF ALL KINDS

Xerography and offset duplicating are saving the New York State department of public works $120,000 yearly. This is an amount expected to grow, since the state is finding more and more uses for the versatility of xerography, a clean, fast, dry, electrostatic process copying—in enlarged, reduced, or the same size—anything written, printed, typed, or drawn.

The New York State department of public works uses XeroX® Model 1218 copying equipment in the quantity reproduction of highway construction plans for bidders and contractors, specification books, and preprinted forms of all kinds.

This equipment reduces, with fine legibility, drawings as large as 24" x 36" onto the 12" x 18" confines of an offset paper master, from which multiple copies are run off on an offset duplicator.

The handier print size achieves economies in space, time, materials, handling, and postage. Hand shearing and hand collating are eliminated as well as a great deal of proofreading. Portability and lower cost of the new prints have increased demand by 25%.

WRITE for proof-of-performance folders showing how xerography is saving time and thousands of dollars for companies of all kinds and sizes.

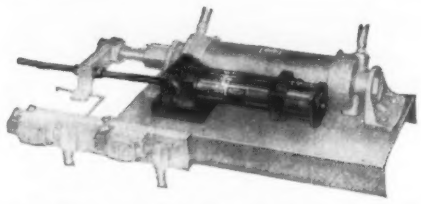
HALOID XEROX INC.
58-214X Haloid St., Rochester 3, N. Y.
BRANCH OFFICES IN PRINCIPAL U. S. AND CANADIAN CITIES

HALOID XEROX®

▲ For more details circle NED-337 E8 on enclosed inquiry slip ▲

VERI-TROL (TRADEMARK) HYDRAULIC

CHECKING CYLINDERS



— designed for use with air cylinders to smooth out stroke variations due to compressibility of air under irregular load conditions.

- ACCURATE SPEED CONTROL is dial-set, load-compensated to assure uniform stroke speed even with irregular loads.
- VISIBLE OIL RESERVOIR, easy to refill.
- 2,000 LB. CHECKING CAPACITY on out stroke, free return.
- 2", 4", 6", 9", 12", 15" and 18" checking stroke lengths.
- IDEAL FOR LOW-COST TOOL OR WORK-PIECE FEEDS.

Take the bumps and jumps out of air cylinder operation — install VERI-TROL checking cylinders wherever you want smooth, accurately-controlled stroke speed. Write now for free data bulletin.

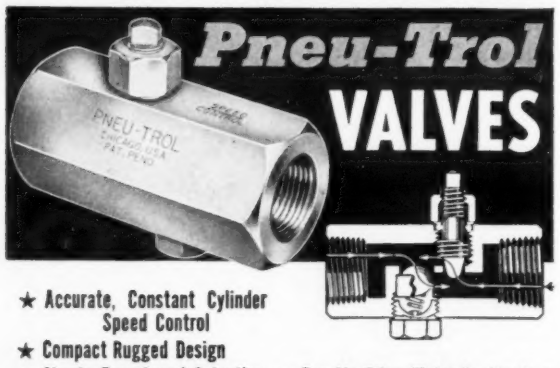
Modernair (Trademark) CORPORATION

Dept. F5, 400 PREDA STREET, SAN LEANDRO, CALIF.

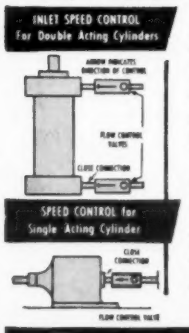
Member National Fluid Power Association 34

For more details circle NED-338 E8 on enclosed inquiry slip

Pneu-Trol VALVES



★ Accurate, Constant Cylinder Speed Control
★ Compact Rugged Design
★ Simple, Easy Speed Selection ★ For Air, Oil or Water Applications



Pneu-Trol Speed Control Valves, are widely used in hundreds of control applications because they combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Retro ball floats in most sensitive position to its seat, requiring only a slight differential pressure to fully open or close it.

Needle design permits maximum flow capacity in the controlled direction. Metal to metal needle and ball seats insure long trouble-free service. Simple, practical "O" gland structure eliminates troublesome leaking. Valve bodies machined from hex brass or aluminum for 2000 psi working pressures; steel and stainless steel for 5000 psi. Made in 5 female pipe sizes — ⅛" to ¾". ATTRACTIVE PRICES . . . IMMEDIATE DELIVERY.

Write for illustrated circular and prices.

Pneu-Trol DEVICES, INC.

1432 N. KEATING AVENUE • CHICAGO 51, ILL.

For more details circle NED-339 E8 on enclosed inquiry slip

12 NEW

¾" and 1"

Norgren AIR LINE FILTERS

Give you the most complete line to choose from

- Now, 92 Models—¼" through 1½"
- Abrasive Solids and Corrosive Liquids Removed
- Automatic or Manual Drain
- Transparent or Metal Bowls
- Choice of 4 Filter Elements

WRITE FOR NO. 900 CATALOG

If it's Norgren... It's Dependable.

C. A. NORGREN CO.

3405 SO. ELATI STREET • ENGLEWOOD, COLORADO

For more details circle NED-340 E8 on enclosed inquiry slip

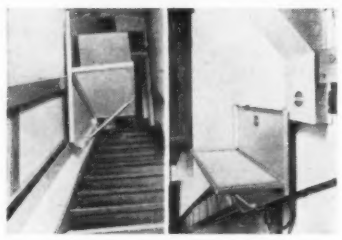
TUBE FITTING USE CONTEST
$15,000 in prizes offered for Ermeto case histories

How Ermeto flareless tube fittings have saved production or maintenance costs, where they have been used to advantage in original equipment, or how they have solved design or operation problems are but a few of the subjects that can be reported with manuscript, circuit drawings, and actual pictures to qualify for one of the 186 prizes in the "Ermeto Contest." This contest is open to everyone associated with the design, maintenance, or operation of equipment in any industry or field.

Application stories or case history type installations using Ermeto fittings can be described. Several different applications can be submitted by each entrant, but each must be a separate finished manuscript. Prizes range from a $1500 first prize to 100 winners of $10 each. The contest closes Sept. 30, 1958, and entries must be postmarked no later than midnight of that date. Complete details of the contest are given in the Weatherhead advertisement at the bottom of Page 11 of this issue. Further information is available by writing the **Win With Ermeto Contest**, Box 2457, Ft. Wayne, Ind.

For more details circle NED-341 E8 on enclosed inquiry slip

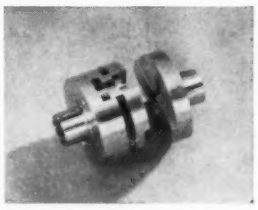
FLOOR-TO-FLOOR CONVEYOR
utilizes existing stairway space



This Space - Miser inclined floor - to-floor conveyor operates on a double channel track attached to one wall of an existing stairway. Drive mechanism and controls are compactly housed out of the way at the head of the stairs. Platform folds away for normal or emergency stair traffic. Made by **A. J. Bayer Co.**, Dept. EX, 2300 E. Slauson Ave., Los Angeles 58, Calif.

For more details circle NED-342 E8 on enclosed inquiry slip

SMALL FLEXIBLE COUPLING
for servos and miniature drives



Hand-lapped surfaces of this Oldham type coupling assure minimum backlash, long life, and uniform contact. Applicable to servo transmissions and similar drives where relatively high torques are involved, coupling consists of two male hubs and a floating female center section. Made by **Sterling Precision Corp.**, Instrument Div., Dept. NED, 17 Matinecock Ave., Port Washington, L. I., N. Y.

For more details circle NED-343 E8 on enclosed inquiry slip

CHECK Internal Dimensions

with Economical RIMAT Gages

Rimat Gages (several models) are ideal for:

- Locating "O" Ring and Snap Ring Grooves
- Checking both diameter and width of internal grooves
- Gaging thin-wall parts
- Gaging internal diameter, taper and out-of-round
- Checking shallow counterbores
- Checking internal threads —gears—splines

For descriptive literature, write to the Sheffield Corporation, Dayton 1, Ohio, U.S.A., Dept. 13.

7990

the SHEFFIELD corporation of Bendix Aviation

manufacture and measurement for mankind

For more details circle NED-344 E8 on enclosed inquiry slip

"Foreman's Helper"

Servis Recorder Model M operates electrically, can be installed in foreman's office.

Makes a Record of

PRODUCTION TIME & DOWN TIME

of any machine

This device is called the SERVIS RECORDER. It gives you a precise work record of any machine. If a machine is idle the Servis Recorder reports exactly when and how long the delay lasted. Records are permanent, easy to read, easy to file. They enable you to improve scheduling, determine the cause of down time, and help you set rates.

Mechanical models which attach to machines, lift trucks or vehicles are also available.

WRITE TODAY! Full information will be mailed to you at once.

THE SERVICE RECORDER COMPANY

1013A ROCKWELL AVE. • CLEVELAND 14, OHIO

For more details circle NED-345 E8 on enclosed inquiry slip

Better Prints . . .
Easier Printmaking . . .
Big, new operating features

The Printmaster 810

Here's the advanced Printmaster 810 — that outdates every other whiteprinter in its price class. Now, you can assure yourself of better whiteprints, more easily, in less time, with these advanced features:

More compact—lower in height . . . saves valuable floor space, allows easier lamp replacement, better control . . . means less fatigue; **new design of brush feed assembly** . . . to automatically control curled edges, folded corners; **new print pick-off** . . . prevents tearing, sticking or scratching; **improved tracing release** . . . convenient release pedal means immediate control of tracing and print—no loss of time and material; **cool cylinder design** . . . practically no sticking in processing plastic-coated materials and foils; *new* **FILTERED air system** . . . Fiberglas® filter delivers filtered air—for cleaner machine, cleaner prints—means less shut-down time for cleaning.

And Ozalid offers other great *proven* features such as new steel frame support . . . double paper rods . . . both rear and front delivery . . . and U/L approved safety devices.

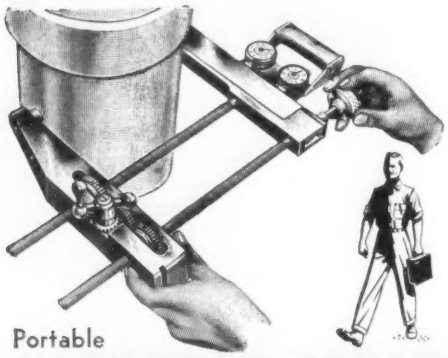
Why not test-run your own tracings through the new "810"? Simply call your local Ozalid representative. Or write: Ozalid, Dept. W-5, Johnson City, N. Y.

OZALID®

First Name in Whiteprinting

A Division of General Aniline & Film Corporation
In Canada: Hughes Owens Company, Ltd., Montreal

For more details circle NED-346 E8 on enclosed inquiry slip



Portable

HARDNESS TESTER

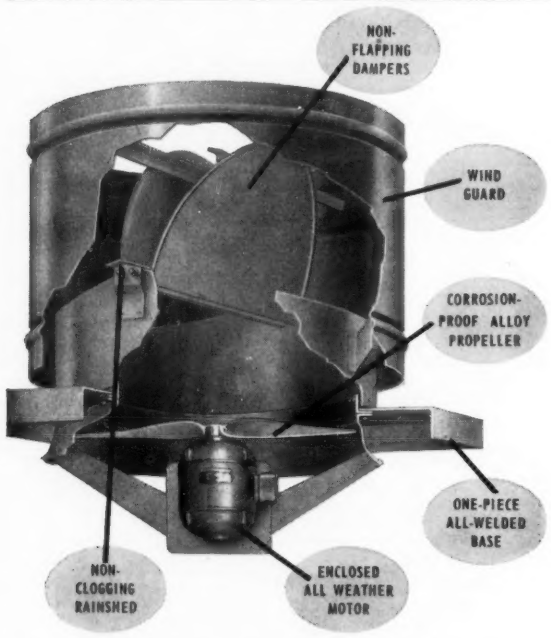
gives "on the spot" Rockwell readings

Test materials, tools, or pieces in production "right there, right now!" Save the work of taking samples to the test bench, save the cost of sectioning, eliminate errors due to need for conversion of other scales to Rockwell hardness numbers. Large dial markings are in standard red and black for quick identification of Rockwell scales, A, B, C, D, E, F, G, H and K — all available as standard. Uses standard indentors, loads — no scale conversions required.

FOR A DEMONSTRATION, WRITE Dept. NED-558

Riehle TESTING MACHINES
A DIVISION OF
American Machine and Metals, Inc.
EAST MOLINE, ILL.

▲ For more details circle **NED-347 E8** on enclosed inquiry slip ▲



WEATHERPROOF

SKY-BLAST®

POWER ROOF VENTILATORS ELIMINATE MAINTENANCE

Sky-Blast weatherproof design is strictly functional and maintenance-free! This powerful industrial ventilator helps preserve roofs too, by shooting heat, fumes and oily mist high into air so they can't turn downward!

All-welded base of heavy gage steel is hot-dip galvanized *after fabrication* . . . has no seams that can open up or rust through. Fully enclosed weatherized R&M motor is completely protected against rust and corrosion. Rigid one-piece cast aluminum magnesium alloy airfoil propeller operates continuously without failure from bending fatigue. Reinforced damper blades won't stick . . . feature self-lubricating bronze bearings. Patented non-clogging rainshed design eliminates troublesome conventional drain trough. Deep inner throat drains condensate onto roof, not into building.

Sizes from 16" to 60" for 2820 to 78,800 CFM—PFMA Certified Ratings. Available with new patented Smoke-Trip® thermally actuated emergency damper release for fire protection.

WRITE TODAY FOR BULLETIN NO. 680-NE

R&M PROPELLAIR®
DIV. OF ROBBINS & MYERS, INC.
SPRINGFIELD, OHIO

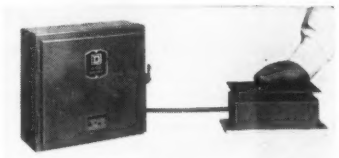
Certified Ratings PFMA

DIRECT CONNECTED · VANEAXIAL · TUBEAXIAL · CENTRIFUGAL

MOVING AIR IS OUR BUSINESS®

▲ For more details circle **NED-348 E8** on enclosed inquiry slip ▲

AIR-GAP LIMIT SWITCH
operated without physical contact



Operating on the principle of a resonant circuit, this air-gap limit switch operates without physical contact. It consists of a magnetic vane which is attached to the moving portion of a machine, a reactor unit mounted on a stationary part of the machine, and a standard relay which opens or closes the circuit. Action of the magnetic vane passing over the reactor actuates the relay. Switch can be adjusted to function when the vane is as far as 7/8 in. from the reactor. Made by **Electric Controller & Mfg. Co.**, 4500 Lee Rd., Cleveland 28, Ohio.

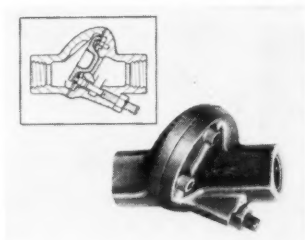
▲ For more details circle **NED-349 E8** on enclosed inquiry slip ▲

FLANGE-TYPE COLLAR
used with Huckbolt fasteners

Adequate bearing surface in wood to metal, wood to rubber, and wood to fiber applications is provided by the 3LC flange-type collar for use with Huckbolt fasteners. The flange also permits use in oversize holes and prevents crushing, extruding, or deforming of the surfaces being joined. The collar is installed with standard Huck power tools. It is offered in aluminum alloys with bright or dull finish or mild steel which may be plated. Five sizes for use with 3/16 to 17/32-in. nominal Huckbolt pin diameters have flange diameters of 3/8 to 1 in. Made by **Huck Mfg. Co.**, 2482 Bellevue Ave., Detroit 7, Mich.

▲ For more details circle **NED-350 E8** on enclosed inquiry slip ▲

FLOW CONTROL VALVE
for air, gas, or hydraulic uses



Fine flow adjustment from cutoff to full flow is provided by the Micro-Trol flow control valves for air, gas, or low pressure hydraulic service. Lower flow rates are metered by adjusting position of cylindrical stem within concentric bore in valve body. As stem clears the bore, its end contacts nylon flapper, lifting it off its seat. Flow is regulated by clearance between flapper and seat. On return, flapper lifts clear for unrestricted passage of medium. Sizes range from 1/4 through 3/4 in. NPT. Valve body is cast bronze, and stem is stainless steel. Made by **Valvair Corp.**, 947 Beardsley Ave., Akron 11, Ohio.

▲ For more details circle **NED-351 E8** on enclosed inquiry slip ▲

Write for your copy of Speedline Catalog TODAY

FLANGE WITHOUT WELDING

Leakproof joints every time *without* welding . . . *faster, lower cost* pipeline assembly—when you use the Speedline Insert Flange. Learn how the *complete line* of Speedline stainless steel fittings offers a degree of process line efficiency and economy not possible with conventional fittings!

Distributors are located in principal cities from coast to coast

Speedline® STAINLESS STEEL FITTINGS
® Reg. T. M. manufactured by
HORACE T. POTTS CO. 532 E. Erie Ave. Phila. 34, Pa.

▲ For more details circle **NED-352 E8** on enclosed inquiry slip ▲

INDUSTRIAL INCINERATORS
—Save Hauling Charges
—Pay for Themselves in 6 to 12 Months!

Model C-2-20 with incinerator burner

Save more than the price of a Winnen Incinerator! Eliminate those monthly charges for hauling refuse.

Avoid fire hazards and reduce your fire insurance premiums. Why take chances of spontaneous combustion, carelessly tossed cigarettes or matches?

Winnen heavy-duty incinerators burn wet refuse, dry or mixed. Your choice of fuels. No fuel needed to burn refuse 80% dry. Guillotine door is oversized for quick loading of cartons and crates.

Winnen incinerators can be installed indoors or out, take up little space. Combustion chamber is lined with heavy refractory material to withstand temperatures of 3000° F. Shell is heavy 10-gauge steel. Optional equipment is available, such as prefab chimney, automatic fuel control, etc.

Three styles; Model C is available in 4, 10, 15, 20 and 30 bushel sizes. Model C-2 is available in four sizes. The new Custom Wincinator is built in *any* size, on order.

All Wincinators have secondary combustion chambers. When operated as directed, they give trouble-free, smokeless-odorless service. Fully guaranteed one year.

Models C and C-2 are shipped knocked down with complete, easy-to-follow directions for installing. Any handyman can set up a Wincinator. No mason needed. Easy to relocate later if you wish.

Also available is a complete line of Prefab Chimneys. Send for further information. Write today to: **Winnen Incinerator Co.**, 932 Broadway, Bedford 10, Ohio. *Advt.*

▲ For more details circle **NED-353 E8** on enclosed inquiry slip ▲

UNBRAKO self-locking socket set screws

Set them . . . forget them . . . they stay tight

UNBRAKO self-locking socket set screws with Nylok* lock by positive action that is not dependent on torquing. The tough, resilient nylon pellet—serviceable from −70 to +250°F—forces mating threads together, locks these screws securely, seated or not. They won't work loose. Use them in holes tapped in soft materials or against hardened shafts . . . as set screws or adjusting screws. Can be used repeatedly. Accurate sockets assure positive, non-slip wrenching. Heat treated alloy steel, continuous grain flow, fully formed Class 3A threads for high strength, exact fit. All standard points in sizes #4 to 1 in. Cup point only in sizes #0 to #3. Also in plated finishes and stainless. Request Bulletin 2193. Unbrako Socket Screw Division, STANDARD PRESSED STEEL CO., Jenkintown 24, Pa.

*T.M. Reg. U.S. Pat. Off., The Nylok Corporation

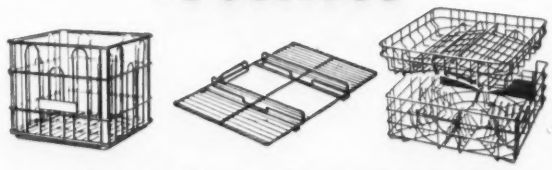
sps Jenkintown • Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co. • National Machine Products Co. • Nutt-Shel Co. • SPS Western • Standco Canada Ltd. • Unbrako Socket Screw Co., Ltd.

▲ For more details circle **NED-354 E8** on enclosed inquiry slip ▲

FOR ECONOMY and DURABILITY...

Formed Wire Products by Peerless



Now, more than ever, *Economy* of production is important. For this reason alone you'll be wise to investigate Peerless' service on formed wire product design and fabrication.

The *Durability* of Peerless' formed wire products too, speaks of quality through and through.

Write today! Your drawings and specifications will bring cost saving quotations by return mail.

PEERLESS WIRE GOODS COMPANY, INC.
2706 FERRY STREET · LAFAYETTE, INDIANA

▲ For more details circle **NED-355 E8** on enclosed inquiry slip ▲

PERFECTION worm gear SPEED REDUCERS

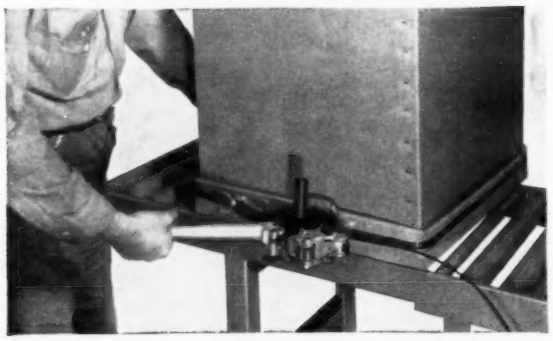
Perfection Worm Gear Speed Reducers by American Stock Gear are available in 9 complete series with ratios ranging from 5 to 1 to 60 to 1 for input revolutions ranging from 300 per minute to 1800 per minute. Speed Reducers are furnished in horizontal right angle drive with worm in either top or bottom position and are also furnished in vertical right angle drive. Shafts are mounted in Timken anti-friction roller bearings. Oil seals are of selected cirvis leather which assures maximum sealing effect. Available through your nearest American Stock Gear Distributor.

Write for new 16 page catalog covering the complete PERFECTION Speed Reducer line.

AMERICAN STOCK GEAR DIVISION
PERFECTION GEAR COMPANY • Harvey Illinois, U.S.A.

For more details circle NED-356 E8 on enclosed inquiry slip

Signode one-hand strapping tool is easier, faster to use

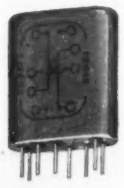


Here's a complete, semi-automatic tool you can operate with *one hand!* It tensions, seals and scores the strapping in one continuous operation. Weighing only 6½ pounds, it is the only one-piece, one-hand strapping tool made. Its light weight makes it easy to apply strapping on the side of a package or on narrow surfaces such as crates and small containers. An operator using this tool can carry on the strapping operation with one hand while draping the strap on the container with the other. For ½", ⅝" and ¾" strapping. Ask for literature on *Signode's SFC Strapping Tool.* Circle inquiry number, or write

SIGNODE STEEL STRAPPING CO.
2643 N. Western Avenue, Chicago 47, Illinois
Offices coast to coast.
Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

For more details circle NED-357 E8 on enclosed inquiry slip

NEW SUB-MINIATURE TYPE S-M RELAY



Less than an inch long
weighs less than ½ oz.

A high precision sub-miniature relay that offers big relay performance in crystal can size. Designed for continuous use in -65° C. to 125° C. temperature range. Meets military specifications MIL-R-25018 and MIL-R-5757C. Has a life expectancy of 100,000 operations minimum, at rated load. Constructed to withstand extremes of severe vibration, heavy shock and temperature.

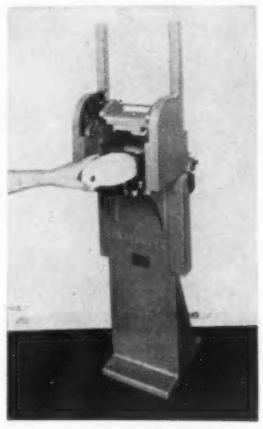
Send for Bulletin S-M

Comar ELECTRIC COMPANY
3349 ADDISON ST.
CHICAGO 18, ILL.

RELAYS
SOLENOIDS
COILS
SWITCHES
HERMETIC SEALING

For more details circle NED-358 E8 on enclosed inquiry slip

PRINTING MACHINE coats raised or recessed designs



Consisting of a cast iron base with platen type printing machine mounted 32 in. high, the Acroprinter Model 401-A will apply ink or enamel to depressed-cavity as well as raised letters and designs. With product properly positioned, imprint in any desired color is applied by Acroprene die. Machine can be operated at speeds determined by feeding ability of operator. Three machine sizes mark items ranging from tabs or buttons to adding machine housings and similar formed parts. Standard model sells for $870. Made by **Acromark Co.**, 7-11 Morrell St., Elizabeth 4, N. J.

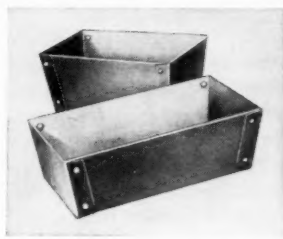
For more details circle NED-359 E8 on enclosed inquiry slip

SOLENOID VALVES nine sizes from ⅜ to 3 in.

Molded epoxy resin waterproof coils, unbreakable piston rings, and guided pilot valve seats are standard on general service Type M solenoid valves. They are packless, two-way, piston pilot-operated units designed for 400 psi and 340° F. Nine sizes from ⅜ to 3 in. are priced from $13.25 upward. Made by **J. D. Gould Co.**, Dept. D, 4707 Massachusetts Ave., Indianapolis 18, Ind.

For more details circle NED-360 E8 on enclosed inquiry slip

SMALL PARTS PANS made of vulcanized fiber



Electrical and electronic components, machined or stamped metal pieces, plastic parts, and other small parts can be separated, stored, and transported in Kennett industrial pans. They are made of 0.050-in. thick vulcanized fiber with riveted construction. Lightweight pans nest for storage, are odor-free and noncontaminating, and can be spray-finished in any specified color. Five sizes from 8 x 4½ x 3½ in. to 10½ x 6 x 2¾ in. are offered. Made by **National Vulcanized Fibre Co.**, Dept. NED, 1058 Beech St., Wilmington 99, Del.

For more details circle NED-361 E8 on enclosed inquiry slip

Republic ELECTRUNITE Stainless Steel Tubing helps MAYTAG bid for Big Volume Sales

Republic ELECTRUNITE® Stainless Steel Tubing made it possible for Maytag Company to produce its new "Highlander" Automatic Washer at a budget price without sacrificing quality.

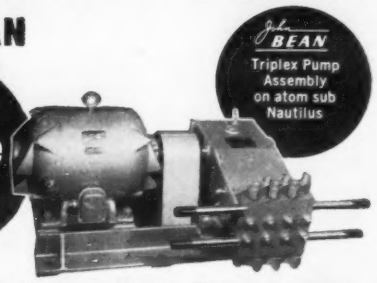
This simple 2½" bearing liner made of Republic ELECTRUNITE Stainless Steel Tubing is featured in the "Highlander". Write for the money-saving facts in eight-page brochure. Ask for SPD-58.

REPUBLIC STEEL
STEEL AND TUBES DIVISION
233 East 131st Street • Cleveland 8, Ohio

For more details circle NED-362 E8 on enclosed inquiry slip

for PRESSURES to 6000 lbs. TEMPERATURES to 300° F.

John BEAN high pressure pumps



Rugged, compact John Bean Triplex Pumps are the answer for high pressure pumping applications, among them coolant pumping in atomic reactors. Pressures range from 1000 to 6000 psi, fluid temperatures to 300° F. Important design features include:

- Lifetime Sapphite plungers
- "Roto-splash" drive end lubrication
- Distortion-free cast iron housings
- Free-acting ball-type valves, replaceable valve seats

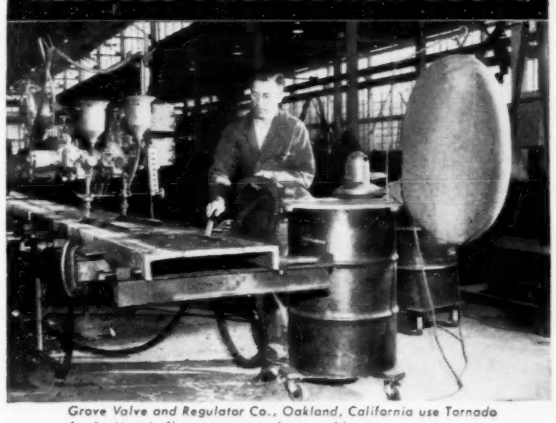
also: John Bean vertical duplex pumps — pressures to 1000 psi, temperatures to 200° F.

Send information request form — today!

John BEAN Division of Food Machinery and Chemical Corporation
INDUSTRIAL SALES DEPT.
LANSING 4, MICHIGAN SAN JOSE 1, CALIFORNIA

For more details circle NED-363 E8 on enclosed inquiry slip

A TORNADO REDUCES PRODUCTION COSTS



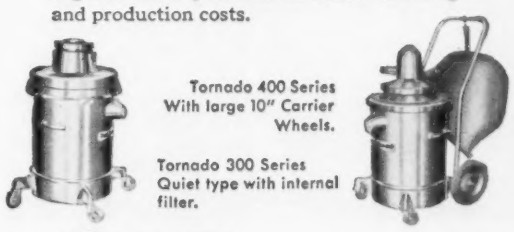
Grove Valve and Regulator Co., Oakland, California use Tornado Jumbo Vacs in flux recovery on large weldments.

A typical application is the Grove Valve and Regulator Company, where Tornado Jumbo Cleaners are used to recover welding flux, an important savings in production costs.

With the Tornado Jumbo you buy only the motor unit, cover, filter and hose, then use it on any of your standard 55 gallon drums. When one drum is full, just move the cover to another drum and continue the job.

Tornado picks up everything. Chips, dirt, water, suds, oil, and small parts —anything that will pass through a 2" hose.

Write today and have a Tornado Vacuum engineer show you how to reduce cleaning and production costs.



Tornado 400 Series With large 10" Carrier Wheels.

Tornado 300 Series Quiet type with internal filter.

BREUER ELECTRIC MFG. CO.
5116 N. Ravenswood Ave., Chicago 40, Illinois

Gentlemen: Please send literature on:
- ☐ Tornado "Jumbo" 55 Gal. Cleaners
- ☐ Tornado 400 Series
- ☐ Tornado 300 Series
- ☐ Have Representative call

Name_____
Company_____
Street_____
City_____ Zone____ State____

For more details circle NED-364 E8 on enclosed inquiry slip

ACE for EXTRUDED PLASTIC PARTS fast... at low cost

RODS • TUBES • SHAPES

in all colors... in your choice of

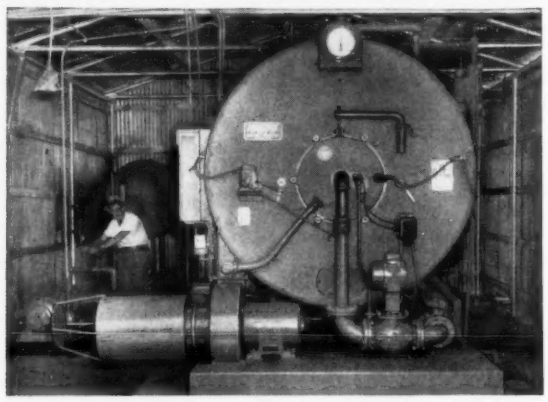
PLEXIGLAS • LUCITE • ETHYLCELLULOSE
POLYETHYLENE • ACETATE • BUTYRATE

in stock... or quickly made to your specifications.

Write, wire, phone for bulletin, samples and prices ... or send specifications, blueprints, for immediate quotation.

ACE PLASTIC COMPANY
91-28 Van Wyck Expwy., Jamaica 35, N. Y. JAmaica 3-5500

For more details circle NED-365 E8 on enclosed inquiry slip



SAVES OVER $15,000 PER YEAR WITH AMESTEAM GENERATOR AUTOMATIC BOILER

"Our total savings run well over $15,000 per year, since we replaced 2 gas-fired boilers with one new 300 HP AMESTEAM GENERATOR Automatic 'Package' Boiler. We are very pleased with the higher quality, lower cost steam it delivers." Those are the money-saving facts from Texas Electric Cooperative, Inc.

WHAT'S YOUR STEAM PROBLEM?

If you need 10 to 600 HP with this kind of space-saving, trouble-free service, write today for catalog and name of your nearby AMESTEAM DEALER.

AMES Iron Works, Inc.
BOX X-58 • OSWEGO, N. Y.

For more details circle NED-366 E8 on enclosed inquiry slip

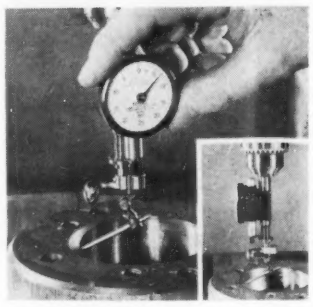
STOP THIEVES WITH "BLACK LIGHT!"

Ideal burglar protection for spacious areas at a reasonable cost, the transistorized Kidde Photo-Electric Burglar Alarm System uses an invisible beam of "black light," is completely tamper-proof, requires no special wiring. It can be installed simply and easily by one man. For more information about this new, U.L.-approved protection, send the coupon or write to Kidde today!

Walter Kidde & Company, Inc., 524A Main St., Belleville 9, N.J.
Send me your Photo-Electric Burglar Alarm Data Sheet U-2.
NAME _____
ADDRESS _____
CITY _____ STATE _____

For more details circle NED-367 E8 on enclosed inquiry slip

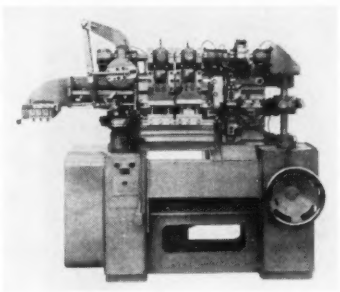
CENTER FINDER
locates spindles in center of hole



Accurate location of jig borer, vertical or horizontal milling machine, drill press, or other machine spindle in the exact center of a hole, plug, or jig button is accomplished by the Schwieterman center finder. It can be used for reboring of old holes, boring new holes in relation to old ones, or locating holes in new work using jig buttons or master plates. Centering takes place under actual machining conditions. Center finder is held in a chuck or collet and its feeler finger is adjusted to touch the wall of a hole. Action is recorded on choice of four indicator dials. Holes up to 3 in. and buttons up to 1½-in. diameter can be centered using the three feelers provided. Made by **Precision Gage & Tool Co.**, 320 E. Third St., Dayton 2, Ohio.

For more details circle NED-368 E8 on enclosed inquiry slip

VERTICAL FORMING MACHINE
easily set up for wire and strip, takes 2 in. strip or 3/16-in. wire



Set-up time and tooling costs are minimized for the Verti-Slide vertical four-slide, wire and strip forming machine because adjustment of feed stroke, cams, presses, and cut-off are made from the front of the machine. It features good visibility and accessibility to all parts, particularly in the tooling area, and requires a floor space of 37 x 87 in. Height is 71 in. (Editor's Note: This machine was incorrectly described in our Dec. 1957 issue.)

Feed gears permit a 90 or 180-degree feed cycle and a maximum feed of 12 in. Power is transmitted by V-belt to the flywheel and through a clutch to the working parts. Presses may be removed without dismounting the lefthand slide; the press bed is also movable. Machine will take a 7½-in. long die set, and has a 1-in. stroke, 6⅝-in. shut height, and ⅜-in. ram adjustment. Maximum strip width is 2 in., and maximum wire diameter is 3/16 in.

Equipped with a 3-hp variable speed motor, the machine has a speed range of 40 to 200 pieces per minute. Capacity with one press is 12 tons or, with two or three presses, 20 tons total. Made by **Torrington Mfg. Co.**, Torrington, Conn.

For more details circle NED-369 E8 on enclosed inquiry slip

PROTECTED by GORTITE

New, advanced designs in the original, neoprene, fabricated sleeve now extend the range of applications to include the rams on giant presses, turn-down screws on steel rolling mills and for both vertical and horizontal protection on machine tools. GORTITE is the protection that has passed rigid tests AMS-3270 and MID-5-7719 in aviation service. ALL GORTITE PARTS flex normally on their convolutions at temperatures 40° below zero to 220°F., without cracking and thereby overcome the weaknesses of leather parts. Latest literature, suggestions on designs and cost estimates sent promptly on your request to:

A & A MFG. COMPANY INC.
712 S. 12th St. • Milwaukee 4, Wis.

ALL SHAPES AND CONTOURS

For more details circle NED-370 E8 on enclosed inquiry slip

FREE ANALYSIS OF YOUR DIFFICULT MACHINING PROBLEMS

PROBLEM: reduce costs of machining this carbide knurling die. **SOLUTION:** A Raytheon Impact Grinding Analyst recommended producing the serrated portion of the die with a Raytheon Impact Grinder. **RESULT:** the die, formerly made by conventional methods and costing $265 each is now produced for $54 —saving $211 per die.

HOW YOU CAN BENEFIT—
If you have a difficult cutting, slicing, drilling, engraving or shaping problem in hard or brittle material, see your Raytheon Impact Grinding Analyst. Write Dept. NC5—without obligation.

RAYTHEON
Excellence in Electronics

RAYTHEON MANUFACTURING COMPANY
Commercial Equipment Division, Industrial Products Dept., Waltham, Mass.

For more details circle NED-371 E8 on enclosed inquiry slip

NEW! Portable Electric Bag Closing Machine

HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

LIGHTWEIGHT — 9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.
POWERFUL—Exclusive top and bottom feed for greater power and production. Direct drive motor with thumb control button.
VERSATILE — Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper. Produces two-thread stitch Type 401, or can be furnished to produce single-thread chain stitch Type 101.
SAFE —Anyone can operate it. No special training required. Can be obtained with overhead suspension. Also, can be supplied with pedestal bracket.

Union Special MACHINE COMPANY
Originator of Filled Bag Closing Machines
416 North Franklin Street Chicago 10, Illinois

For more details circle NED-372 E8 on enclosed inquiry slip

Let us solve your pumping problems

The Blackmer organization is ready to review your applications and make rotary pump recommendations that will save time and money. Blackmer offers the "know how" of over 50 years of experience in the design, manufacture and application of rotary pumping equipment. Why not add this specialized experience to your own, for the best answer to your liquid materials handling problem.

BLACKMER PUMPS *"liquid materials handling"® equipment*

BLACKMER

Industrial, Hand and Truck Pumps, Strainers, Pressure Control Valves
BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICH.
DIVISION SALES OFFICES — NEW YORK • ATLANTA • CHICAGO
GRAND RAPIDS • DALLAS • WASHINGTON • SAN FRANCISCO
See Yellow pages for your local sales representative

For more details circle NED-373 E8 on enclosed inquiry slip

SAVE STORAGE SPACE

SAVE HANDLING TIME

Brown Sectional Stock Racks store more stock in less space. Handling is reduced to a short lateral movement instead of a long laborious end-haul.

Brown Racks are unique in both flexibility and economy. Spaced as required they can be easily relocated . . . they are neither cross-braced nor floor-bolted. Accessories, including base brackets and trays, increase usefulness.

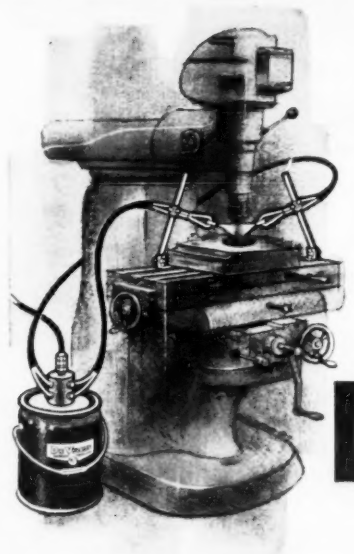
Brown Racks are quickly installed, all components are slip-fitted together. No bolting, no tools.

WRITE TODAY for complete information on how low-cost Brown Stock Racks can help solve your storage problems. Brown Engineering Company, 129 No. 3rd Street, Reading, Pennsylvania.

BROWN *Flexible* **STOCK RACKS**

▲ For more details circle **NED-374 E8** on enclosed inquiry slip ▲

$40 mist-spray cooling outfit DOUBLES TOOL LIFE



Now—double tool life, hold closer tolerances with Multi-Mister, DeVilbiss' new $40 mist-spray cooling outfit. Call your DeVilbiss man for a demonstration, or write for Bulletin BC 1025.

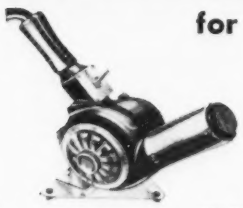
FOR BETTER SERVICE, BUY **DEVILBISS**

THE DEVILBISS COMPANY, Toledo 1, Ohio

Branch Offices in Principal Cities

▲ For more details circle **NED-375 E8** on enclosed inquiry slip ▲

FLAMELESS BLOW TORCH



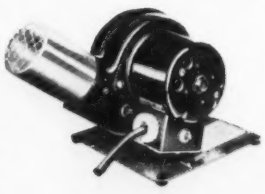
for quick heat up to 1000° without a flame

$37.50

For applications requiring quick concentrated heat blast up to 1000° without flame. Soften, form, mold and patch plastics, etc. Temperature varied by air intake adjustment. 110-120 V. AC-DC motor. 8 ft. heavy duty cord. Intermittent duty.

Other models available with lower temp. ranges.

AIR HEATER BLOWER



For quick electrically heated air up to 500° F. For accelerating drying processes or for localized heating. B.T.U. 3400. Air velocity 2000 FPM. 110-130 V. AC only. 8 ft. heavy duty cord. Continuous duty. 2" dia. x 3" long discharge nozzle.

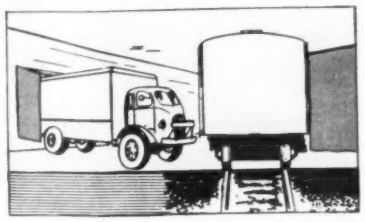
300° F.—1000 watts $37.50
500° F.—1400 watts 39.50

Order through your local laboratory or industrial supplier or direct.

Master APPLIANCE MFG. CO. RACINE, WISCONSIN

▲ For more details circle **NED-376 E8** on enclosed inquiry slip ▲

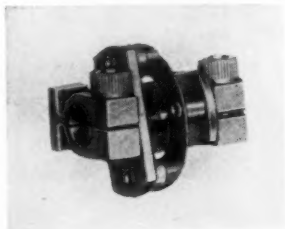
DOCK DOOR SHELTERS
exclude wind, rain, and sun



Single - frame Dazzo dock door shelters now give overhead protection from rain when expanded to the side of any width freight car. They will fit flush against the side of 128-in. wide car, and the valance can be tacked inside the box car door to shed water falling off the freight car roof. When narrow cars are being loaded, the valance can also be tacked inside the car door. Made by **Dazzo Products Inc.**, Dept. FL, 152 Bleecker St., New York 12, N. Y.

▲ For more details circle **NED-377 E8** on enclosed inquiry slip ▲

SMALL DISC COUPLINGS
for angularly misaligned shafts



Shafts in angular misalignment up to 2 degrees can be coupled with this disc coupling, consisting of a flexible disc riveted to a pair of precision hubs. Unit is free of backlash and thus can be used for servo applications requiring high transmission accuracy. Coupling accepts 1/4-in. shafting and is available for either clamp or pin fastening. Operating speeds to 5000 rpm with maximum torque of 50 oz-in. are possible. Made by **Reeves Instrument Corp.**, Roosevelt Field, Garden City, N. Y.

▲ For more details circle **NED-378 E8** on enclosed inquiry slip ▲

INDUCTION HEATING UNITS
for heat treating, joining operations

Precise heat control for heat treating, hardening, billet preheating, ingot breakdown, and brazing and soldering is assured by line of induction heating units. Low frequency, motor-generator powered unit is rated 7½ to 1750 kw, 1-10 kc. Medium frequency, electronic generator unit is rated 3 to 50 kw, 450-kc, whereas high frequency electronic generator model provides ¾ to 20 kw at 27.1 megacycles. Installations can be furnished with automated parts handling and feeding systems, engineered to the job. Made by **Robotron Corp.**, 21390 W. Eight Mile Rd., Detroit 19, Mich.

▲ For more details circle **NED-379 E8** on enclosed inquiry slip ▲

FREE SAMPLES and APPLICATIONS of INDUSTRIAL FELT*

*made to S.A.E. and Federal Govt. Specifications

See why **CONTINENTAL FELT** fills hundreds of jobs daily

SEE HOW FELT FITS IN WITH YOUR PRODUCTS

Ask for booklet G

CONTINENTAL FELT COMPANY, INC. 1905
22-26 WEST 15th STREET NEW YORK 11, N. Y.

▲ For more details circle **NED-380 E8** on enclosed inquiry slip ▲

"This $65 instrument saves me 60¢ an hour in production costs"

TIME RECORDER + TOTALIZER

what TRT is — An instrument that automatically records "on-off" time of **any machine or process.** Information is marked on a continuous, time-indexed tape. Marking stylus is electrically actuated. Tapes run 4 months.

what TRT does — Shows on tape **exactly when** "down-time" occurs, how long it lasts. Access window enables operator to write reason for stoppage. Visual counter totals **actual productive time.**

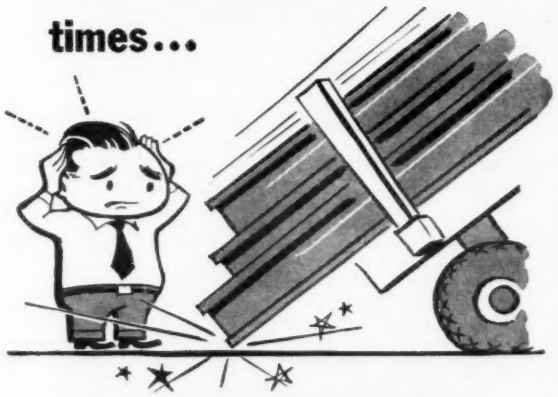
how TRT saves — TRT data-on-tape gives accurate, single-source basis for **cost-cutting** in plant or office: time study, production control, preventive maintenance, locating bottlenecks. Write for free Brochure BR-5

standard INSTRUMENT CORPORATION 657 BROADWAY, NEW YORK 12, N. Y.

▲ For more details circle **NED-381 E8** on enclosed inquiry slip ▲

LAPIDOLITH

makes concrete floors many times...



...HARDER!

A LAPIDOLITH treatment saves concrete floors from abrasion and dusting!

LAPIDOLITH comes with a bonded guarantee when applied according to specifications! Case-hardens concrete surfaces for heavy service . . . reduces cost of floor maintenance . . . gives protection against oils and chemicals.

Mail Coupon for Facts

A Product of Sonneborn RESEARCH

L. SONNEBORN SONS, INC.
Building Products Division, Dept. N58
404 Fourth Avenue, New York 16, N. Y.

Gentlemen:

☐ We are interested in more facts on LAPIDOLITH

☐ Please send field representative for FREE inspection and recommendations for concrete floor treatment. Areas of 5000 sq. ft. or more.

☐ Also include FREE copy of your 128-page Building Construction and Maintenance Handbook.

NAME.....TITLE.....

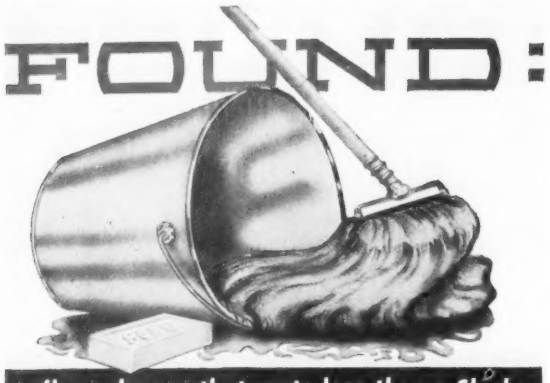
COMPANY.....

ADDRESS.....

CITY.....ZONE....STATE.....

▲ For more details circle **NED-382 E8** on enclosed inquiry slip ▲

FOUND:



a floor cleaner that costs less than a Clarke

In the long run, however, mop cleaning costs 10 to 20 times as much as cleaning by machine. That's why more people are investing in Clarke maintainers and wet-dry vacuum cleaners. Clarke machines mean fast, efficient, dependable cleaning which results in lowest possible cost and sparkling, sanitary floors. Have your Clarke distributor show you.

Clarke SANDING MACHINE COMPANY
225 Clay Ave., Muskegon, Mich.
Distributed in Canada: G. H. Wood & Co., Ltd., P.O. Box 34, Toronto 14, Ont.
Authorized Sales Representatives and Service Branches in Principal Cities.

▲ For more details circle NED-384 E8 on enclosed inquiry slip ▲

Calibrated, Dual Switch TEMPERATURE CONTROL B27A

TYPE
B27A

United Electric's Type B27A Temperature Control is a local mounted, enclosed unit that has been designed for applications where it is desirable to control two separate circuits at different temperatures by means of a single control unit. Independent switch adjustments provide a maximum span of approximately 20° F between switch settings, and this span is constantly maintained throughout the control range.

Adjustable Range	Ranges of 50° or 100° F. between limits of 50° and 400° F.
Maximum Difference Between Switch Settings	Approximately 20° F.
Switch Ratings	Up to 15 amps. at 115 or 230 volts A.C. 20 amp. A.C. or D.C. switches also available.
Switch Types	N.O., N.C., or double throw — no neutral position.
Adjustments	By rotating a single turn knob and pointer against a calibrated dial. Individual screw adjustments on switches for adjusting span between switch settings.
Electrical Connections	Via 7/8" diameter clearance hole and an internally mounted terminal board.
Mounting	In any position by the 1/2" NPT on the immersion element.
Enclosure	Cast aluminum case with black wrinkle finish. Bright-dipped brass immersion element.

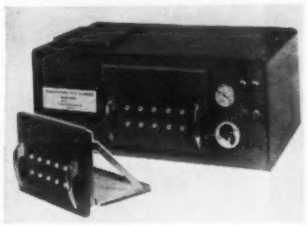
UNITED ELECTRIC manufactures a complete line of temperature, pressure, and vacuum controls. For special applications, standard units may be modified, or custom-built units may be provided.

For additional information on local mounted temperature controls, including Type B27A, request Section 100 of our new catalog.

United Electric Controls COMPANY
82 SCHOOL STREET, WATERTOWN, MASS

▲ For more details circle NED-385 E8 on enclosed inquiry slip ▲

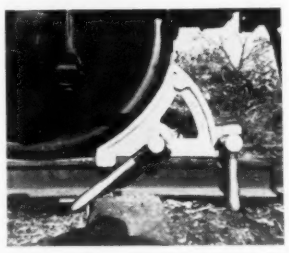
TEMPERATURE TESTING OVEN
accurate over −65 to 500° F range



This temperature testing oven will maintain, within ±2° F, any temperature set in range of −65 to 500° F. Designed for lab testing of electrical and electronic components and circuits, unit has dial-controlled anticipator thermostat. Dry ice maintains minimum temperatures and built-in heating coils develop desired heats. Unit operates on 110 v ac and has an integral blower to assure uniform chamber temperature. Chamber measures 10 x 7 x 7 in. Temperatures to −90° F are available when unit under test is not a heat source. Made by **Delta Design Engineers, Inc.**, Dept. 101, 3039 Adams Ave., San Diego 16, Calif.

▲ For more details circle NED-386 E8 on enclosed inquiry slip ▲

RAILROAD CAR STOPS
adjust to all rail sizes



Easily - installed railroad car stops are used without hole drilling, produce no rail joint interference, and are semipermanent. Used in sets, one size is adjustable to fit rails ranging from 60 lb to the heaviest section. Stops are joined to the rail by two forged steel U-bolt clamps and absorb the shock of the striking car wheels. Made by **Aldon Co.**, Dept. 11, 3338 Ravenswood Ave., Chicago 13, Ill.

▲ For more details circle NED-387 E8 on enclosed inquiry slip ▲

BULK LOAD HAULER
mounts on conventional trucks

With this Model CH - 800M Load Lugger mounted on a truck chassis, one man can handle 16-cu yd open or closed containers, and up to 24,000-lb payloads. It consists of a two - arm hoist which is hydraulically powered to pick up, carry, dump, and spot many types of containers. Latter can be designed to hold solids, liquids, or gases. Units are adaptable for economical handling of a wide range of products. Made by **Borg-Warner Corp.**, Ingersoll Kalamazoo Div., 1910 N. Pitcher St., Kalamazoo, Mich.

▲ For more details circle NED-388 E8 on enclosed inquiry slip ▲

1500 BENDS PER HOUR
THE WORLD'S FASTEST TUBE BENDER

NEW! Sensational **BEND-EX** MODEL B-4

➡ ECONOMICAL! COMPACT!
➡ Bends all metal tubing of steel, aluminum, brass, copper, stainless steel

This compact bench model is not only the fastest, but the most economical bender ever built. Ideal for both mass production and custom quantities. So simple—anyone can operate. Heavy duty construction! Guarantees QUALITY, speed and low cost.

Adaptable to all Bending Requirements

- AIRCRAFT
- AUTOMOTIVE
- PLUMBING
- TOYS
- FURNITURE
- AIR CONDITIONING
- REFRIGERATORS
- METAL CABINETS

WRITE FOR DETAILS

MACHINE TOOL DIVISION OF
PAUL MACHINE TOOL & DIE WORKS
4600 SOUTH KEDZIE DEPT. B-4
CHICAGO 32, ILLINOIS

▲ For more details circle NED-389 E8 on enclosed inquiry slip ▲

RECIPROCATING SOLENOIDS

R2D-328 SOLENOID OPERATOR

Reciprocating solenoids have the trade name of "RD Solenoid Operators."

DEFINITION

An RD solenoid operator is a reciprocating solenoid unit made up of two solenoids mounted in tandem to actuate a common plunger oscillating between them.

CLASSIFICATION AND DENOMINATION

Class I. Plain RD operators for operation in open air.
Class II. Oil immersed, RDZ operators.
Class III. Explosion proof RDX operators.
Type 1. Two point operators R2D, R2DZ, R2DX.
Type 2. Three point operators R3D, R3DZ, R3DX.
Form A, side mounted, Form B, end mounted.

Operators available: RD-100, RD-300, RDX-300, RD-400, RD-700 and RD-800.

Ask for bulletins on operators, solenoids, solenoid brakes, Reciprocators and Semotors. See our catalogs in Sweet's Catalog Service.

TROMBETTA SOLENOID CORP.
329 N. MILWAUKEE ST. • MILWAUKEE, WIS.

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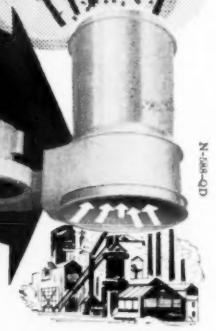
Patent No. 2,722,372.
Other Patents Pending.

Quickdraft
THE WORLD'S MOST EFFICIENT POWER EXHAUSTER FOR INDUSTRY



- ★ STATIC PRESSURE UP TO 20 INCHES
- ★ NO MOTORS OR FANS IN EXHAUST LINE
- ★ NEEDS NO STACKS
- ★ ACID RESISTING FINISHES

IMPORTANT NOTICE
For withstanding corrosive gases, all Quickdraft units are available in standard acid resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (P.V.C.), and with plastic and Fiberglas coatings.

Quickdraft provides up to 20-inches static pressure for **exhausting** paint spray, abrasives, corrosive gases, noxious fumes and high temperatures . . . **moving** grains, powders, salts and trimmings . . . **recovering** metallic waste from foundry stacks. It reduces maintenance costs . . . eliminates down-time for cleaning and replacing fan blades. In addition, it vents incinerators, heating plants and water heaters . . . providing constant draft for efficient and economical combustion. Write for engineering data on your application, today.

Quickdraft CORPORATION
P. O. Box 87-L
Dueber Hampden Building
Canton 1, Ohio

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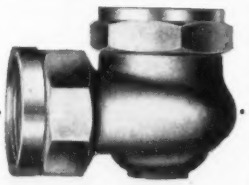
SPRAYING SYSTEMS CO.



for lower cost

and better performance

SPRAY NOZZLES

Modern design. Precision machining. All materials. Thousands of standard industrial spray nozzle types and sizes to choose from. Years of proved experience at your service.

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Ask for our new 48 page Catalog No. 24 . . . the most comprehensive spray nozzle catalog ever produced. Yours for the asking.

SPRAYING SYSTEMS CO.
3211 Randolph Street • Bellwood, Illinois

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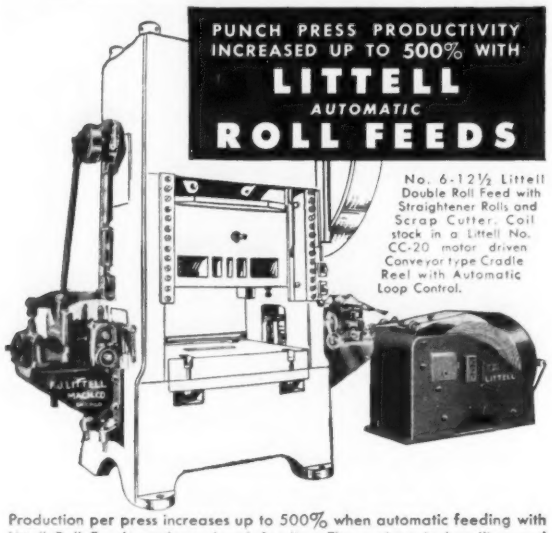

Production per press increases up to 500% when automatic feeding with Littell Roll Feeds replaces hand feeding. The savings in handling and storage of coil stock added to the economies of faster production produce an automation dividend. Littell Roll Feeds in a wide range of sizes and models handle stock up to .156" maximum thickness and up to 72" maximum width at speeds of 50 to 250 strokes per minute. Lengths fed per stroke range up to 50". Standard Littell Automatic Feeds serve all types and sizes of presses. WRITE FOR LITTELL CATALOG SECTION "A"

F. J. LITTELL MACHINE CO. Speed with Safety
ROLL FEEDS • COIL CRADLES
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland
4169 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

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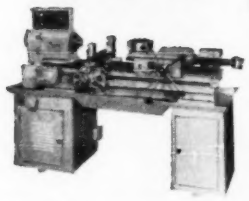
NEW! LOGAMATIC "400" BY Logan



SEE IT AT THE ASTE SHOW BOOTH 625 MAY 1-8

FIRST of a new series of automated turret lathes, the *Logamatic "400"* — with 14-inch swing and 1⅝-inch spindle hole—puts profit in short or long production runs with an ease, accuracy and flexibility not previously available in its price range.

See this versatile performer *in operation* at Philadelphia's Convention Center, May 1-8, during your visit to the ASTE Convention! *FOR MORE INFORMATION about the new Logamatic "400", drop a line to:*

LOGAN ENGINEERING CO.
Dept. Q-558, 4901 Lawrence Avenue, Chicago 30, Illinois

▲ For more details circle NED-394 E8 on enclosed inquiry slip ▲

Multi-Position Air Cylinders

Westinghouse Multi-Position Cylinders provide consistently reliable linear positioning power. They are non-cushioned cylinders with 4, 5, or 7 positions of stroke. One position is at each end of the piston travel; the others equidistant between the end positions. These short-stroke, small-diameter cylinders are ruggedly constructed of corrosion-resistant materials. Maximum operating pressure: 250 psi.

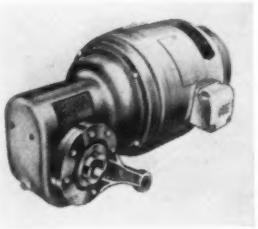
Air Control has any number of uses in industrial automation, and dependable Westinghouse Multi-Position Cylinders are fundamental components of many new pneumatic systems.

Consult your local Westinghouse Air Brake Distributor. He's listed in the classified phone directory under "Cylinders: Air." Ask him or write for Multi-Position Cylinder Catalog A3-49.02.

Westinghouse Air Brake COMPANY
Industrial Products Division
WILMERDING PENNSYLVANIA

▲ For more details circle NED-395 E8 on enclosed inquiry slip ▲

MOTORIZED SPEED REDUCER
has hollow shaft for direct coupling



Right angle Motoreducer has a keyway - equipped hollow shaft that permits direct-coupling to equipment by inserting the drive shaft of a machine. Only other mounting arrangement is the torque arm which serves as an "anchor." Unit can be mounted in limited spaces in almost any position, with shaft up or down. Hollowshaft Motoreducer is offered with standard singlespeed motors, or in "power packages" incorporating magnetic brake, slip ring, two-speed, and Fluid Shaft drive motors. Thirteen gear reduction ratios for 18 to 250-rpm outputs are available in a ½ to 2-hp range. Made by **Reuland Electric Co.**, Mission & Fremont, Alhambra, Calif.

▲ For more details circle NED-396 E8 on enclosed inquiry slip ▲

COATED GLOVES
neoprene, vinyl, and rubber coatings

Line of work gloves includes neoprene, vinyl plastic, and rubber coated types. Liquidproof neoprene gloves resist acids, solvents, and caustics, and are recommended wherever heat, snagging, or cutting are a danger. Fully-coated vinyl plastic gloves (shown) are effective against oil and will protect against solvents and abrasives. Finger dexterity is excellent. Natural rubber-coated group affords positive gripping and resistance to cutting, abrasion, heat, and puncture. Made by **Riegel Textile Corp.**, Industrial Glove Div., Conover, N. C.

▲ For more details circle NED-397 E8 on enclosed inquiry slip ▲

MECHANICAL LEAD HOLDER
for draftsmen and engineers

Swiss-made Caran D'Ache Technograph Fixpencil, a mechanical lead holder for use by draftsmen, engineers, and architects, holds lead in a clutch-action chuck. It is made of a lightweight alloy and has a sand-blasted, non-slip finger grip. An adjustable indicator denotes lead hardness and a needle-point lead sharpener is built into the removable cap. Leads are available in 14 degrees of hardness from 3B to 9H. Available from **Reliance Pen & Pencil Corp.**, Dept. CP, 22 S. Sixth Ave., Mt. Vernon, N. Y.

▲ For more details circle NED-398 E8 on enclosed inquiry slip ▲

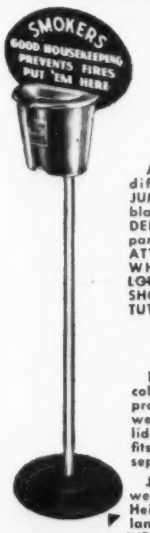
CIGARS-CIGARETTES-MATCHES
immediately extinguished
...with
SIPCO DUNKING STATIONS

Fire Hazards from Smoking are a problem EVERYWHERE.

STOP FIRES BEFORE THEY START—with SIPCO DUNKING STATIONS.

Heavy duty CAST ALUMINUM canisters—guaranteed 3 years against breakage. Partly filled with water, they drown the "smoke". NO FIRE HAZARDS — NO ODORS — NO UNSANITARY CONDITION.

Lift off the canister, flip back the lid, dump it and the cleaning job is done.



Available in over a dozen different STANDARD and JUMBO SIZE models. Choice of black crinkle or bright polished DELUXE finishes to suit your particular requirements. NEAT, ATTRACTIVE — USED EVERYWHERE — OFFICES, CLUBS, LOUNGES, HOSPITALS, HOTELS, SHOPS, RESTAURANTS, INSTITUTIONS, SCHOOLS, ETC.

NEW MODEL 4J
Designed for permanent mounting on walls, posts, columns, etc. in public areas. Eliminates pilfering problem. JUMBO size canister furnished with light weight, rugged glass-fiber inner-liner. Flip back the lid—lift out the inner-liner and dump it. Inner-liner fits all JUMBO size SIPCO canisters and is available separately.

MODEL 1JD
JUMBO size DELUXE FLOOR MODEL. Heavy weighted base and attractive, eye catching sign. Height 42"—weight 26 lbs. Ideal for halls, aisles, landings, etc. Also available less sign (MODEL 1JWS).
WRITE FOR ILLUSTRATED BROCHURE.

STANDARD INDUSTRIAL PRODUCTS CO.
DEPT. D • 920 N. GARFIELD AVE. • PEORIA, ILLINOIS

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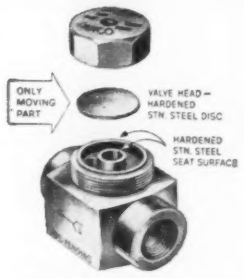
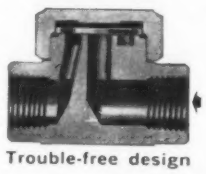
STEAM TRAP MAINTENANCE CUT!



Only 3 parts



Trouble-free design

Simplest design of all virtually eliminates wear

The Sarco TD practically does away with steam trap maintenance.

Only 3 simple, rugged parts . . . all stainless steel. Only *one* moving part . . . a solid hardened stainless steel disc.

Highly resistant to superheat, water-hammer, corrosive condensate.

No mechanism . . . the kinetic energy of steam closes the valve. No narrow channels to choke. No gaskets to leak.

Ask for 60-day trial

We'll send you Sarco TD steam trap, strainer. No cost or obligation. Buy *only* if completely satisfied. Advise size—⅜, ½, ¾ or 1" and use.

2233-F
Sarco Co., Inc., 635 Madison Avenue, New York 22, N. Y.

SARCO Thermo-Dynamic STEAM TRAP
THE MODERN TRAP THAT IS MAKING STEAM TRAPPING HISTORY!

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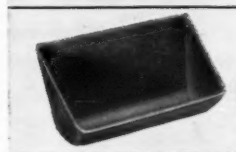
For longer lifting life . . .

STYLE A—These buckets are commonly used on elevators handling coal, grain, cement, chemicals, pulp and similar materials. Available in a range of sizes and capacities.

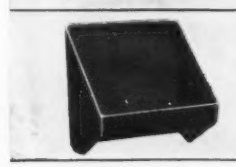
STYLE AA—Designed for longer life on same type of materials as Style A buckets. These buckets are recommended for especially heavy and gritty materials such as sand, gravel and stone.

STYLE AA-RB—Elevate same materials as Style AA. These are recommended for extra-heavy service conditions. Buckets feature double-thickness backs, wide digging lip and reinforced ribs.



STYLE B—Widely used for handling coke, ores, stone, and other coarse materials. Buckets offer proper shape and low front to insure clean discharge at relatively slow speed.

STYLE C—Recommended for handling clay, sugar, salt, wet grain, finely pulverized ores, and the like. Open front and low loading angle design prevent materials from sticking or packing in buckets.



CONTINUOUS—Designed for elevating coal, sand, gravel, crushed stone, and other dry materials. Provide high capacities at low speeds. Flanged front forms chute—assures clean, gentle discharge.

match your material and load requirements with the right LINK-BELT cast elevator bucket

Light or heavy . . . free-flowing or sticky . . . abrasive or corrosive . . . fine or lumpy—Link-Belt offers a type and size of cast elevator bucket designed to give you years of trouble-free, low-cost performance. Link-Belt buckets feature reinforced corners for added strength . . . smooth, seamless surfaces for quick, easy pickup and discharge. And they're available in malleable iron or longer-lasting Promal. For facts, see your Link-Belt office or authorized stock-carrying distributor. Ask for Booklet 2465.

LINK-BELT

CAST ELEVATOR BUCKETS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,547

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It's what's IN these wheels
That brings OUT big, new time-savings

A COMPLETELY NEW SLANT ON ABRASIVE APPLICATIONS

Multi-Use Brightboy gives you a *definitely, different working action*, with *abrasive and rubber functioning simultaneously*. BURRING, FINISHING, CLEANING, POLISHING, frequently in a single step, time saving operation.

Brightboy stock numbers are "job-matched" to your work—to your usual and special finishing. Silicon Carbide and Aluminum Oxide grains. Each in grades from extra fine to extra coarse, in soft, firm and tough rubber binders.

ASK YOUR DEALER to recommend the Brightboy numbers for your needs, and for the Brightboy catalog listing applications and machine speeds. Ask him or write us for *"Notes From The Brightboy Service Engineer,"* an informal news letter describing Brightboy applications reported by our service engineers.

Write for FREE SAMPLE
BRIGHTBOY HAND PIECE
for quick-job cleaning

WELDON ROBERTS Brightboy RUBBER CUSHIONED ABRASIVES

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WELDON ROBERTS RUBBER CO.
95 North 13th Street
Newark 7, N. J.
America's Pioneer Manufacturer of Rubber-Bonded Abrasives

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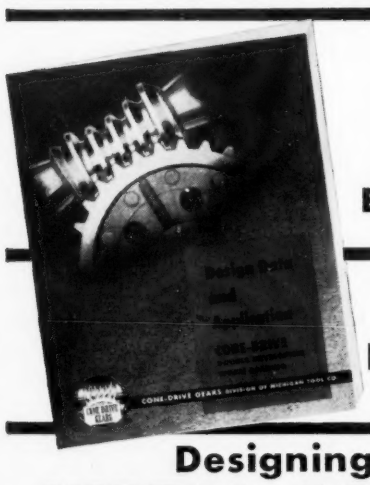

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New Bulletin 200

Designing
WORM GEARS

24 pages of technical data and formulae with step-by-step instructions on the design and application of Cone-Drive double-enveloping worm gearing.

CONE-DRIVE GEARS
DIVISION MICHIGAN TOOL COMPANY
7171 E. McNichols Rd. • Detroit 12, Michigan

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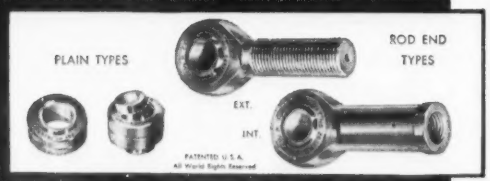
"MONOBALL"®
Self-Aligning Bearings



CHARACTERISTICS

ANALYSIS	RECOMMENDED USE
1 Stainless Steel Ball and Race	For types operating under high temperature (800-1200 degrees F.).
2 Chrome Moly Steel Ball and Race	For types operating under high radial ultimate loads (3000-893,000 lbs.).
3 Bronze Race and Chrome Moly Steel Ball	For types operating under normal loads with minimum friction requirements.

Thousands in use. Backed by years of service life. Wide variety of Plain Types in bore sizes 3/16" to 6" Dia. Rod end types in similar size range with externally or internally threaded shanks. Our Engineers welcome an opportunity of studying individual requirements and prescribing a type or types which will serve under your demanding conditions. Southwest can design special types to fit individual specifications. As a result of thorough study of different operating conditions, various steel alloys have been used to meet specific needs. Write for revised Engineering Manual describing complete line. Dept. NED 58

SOUTHWEST PRODUCTS CO.
1705 SO. MOUNTAIN AVE., MONROVIA, CALIFORNIA

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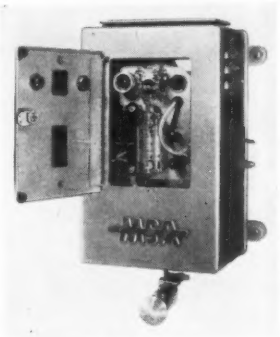
COMBUSTIBLE GAS ALARM for use in nonhazardous areas

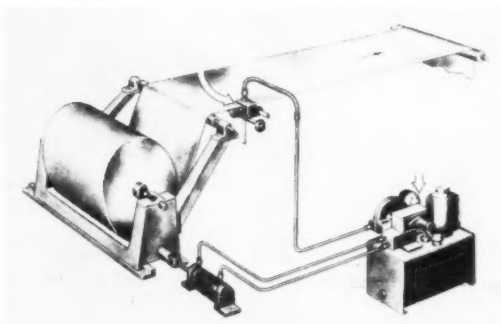


Intended for installation in nonhazardous areas, this Explosilarm self-contained combustible gas alarm can be used with a sample line as long as 100 ft. Alarm is used in petroleum refineries, gas compressor stations, on gas-fired industrial ovens to check atmosphere before igniting burners, and to check gas leaks in cable vaults and labs. A vacuum pump draws sample stream across a heated filament that is one resistance arm of a Wheatstone bridge circuit. Any combustible gases present burn catalytically at the hot filament surface, raising its temperature and resistance. Alarm cabinet measures 14¼ x 8¾ x 6¼ in. Made by **Mine Safety Appliances Co.**, 220 N. Braddock Ave., Pittsburgh 8, Pa.

▲ For more details circle NED-405 E8 on enclosed inquiry slip ▲

WEB GUIDE CONTROL incorporates hydraulic relay and noncontact edge detector

Hague hydraulic relay which controls this web guide control makes the system sensitive to any change and quick in its response. The relay, which can be in-



stalled in any position or location with respect to the hydraulic pump and reservoir, operates on the hydraulic jet principle with a sealed and pressurized 50 to 750-psi power circuit.

Hydraulic volume output of the relay is determined by one of seven sets of internal parts that provide the optimum volume output. Control uses a noncontact method of edge detection, making it safe to use with delicate films, yet force is adequate to guide heavy steel strip. Edge detector consists of a constant low pressure stream of air passing across a gap and impinging upon a receiving opening that is connected to the outside of the regulator diaphragm. Made by **North American Mfg. Co.**, Hydraulic Controls Div., 4453 E. 71st St., Cleveland 5, Ohio.

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THIS VAST IMPROVEMENT OVER CONVENTIONAL HEIGHT GAGES OFFERS A NEW CONCEPT IN THE MAKING OF ACCURATE MEASUREMENTS

The radically NEW OPTIC VERNIER HEIGHT GAGE TUMICO

Saves Time and Labor!

RAPID QUICK ADJUSTMENT
Scriber clamp permits firm clamping above and below jaw

SIZES AVAILABLE
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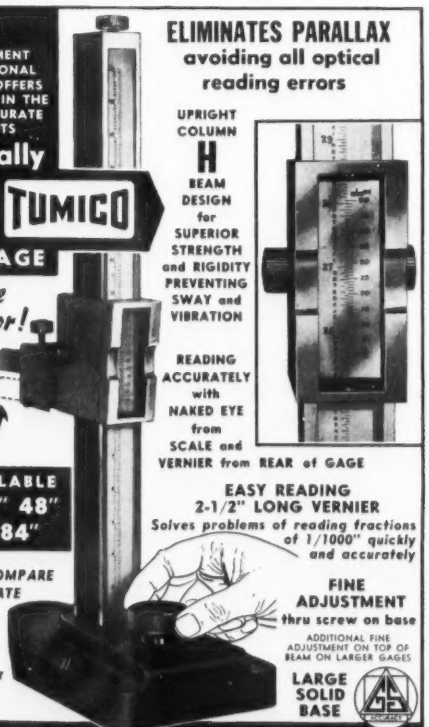

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READING ACCURATELY with NAKED EYE from SCALE and VERNIER from REAR of GAGE

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COMPLETE LINE OF PRECISION INSTRUMENTS
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Peak performance in all climates—humid or arid—high or low temperatures. You *profit in any weather* with this husky, totally enclosed, fan cooled BROOK MOTOR. Yet, it actually *costs less* than an ordinary, light duty motor. Slip Ring or Squirrel Cage type, 1 to 600 H.P., ready for shipment from warehouse stocks in major industrial centers. Send for brochure and name of your local Brook Dealer.

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Especially Built for the Welder. Perfect tool for grinding down welds, casting fins and risers. Milwaukee's *exclusive* coaster brake clutch drive absorbs backlash and shocks . . . doubling gear and motor life. Large cyclonic fan and specially designed exhaust ports provide extra ventilating capacity . . . cooler running. Powerful, no-stall MILWAUKEE motor delivers a full 1½ HP *at the spindle* . . . 5000 RPM . . . ball and roller bearings throughout. Totally enclosed grit-proof, dust-proof trigger switch. *See your Milwaukee Distributor or write*:

Look under "Tools-Electric"

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Mosinee Data File brings you up to date on *specially treated papers* that resist flame, fungi, rot, moisture and other biological and chemical conditions that cause loss of profits.

Mosinee Specialized Papers are widely used in packaging, and in electrical, construction, fabrication, insulation, agricultural and other industries.

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MOSINEE PAPER MILLS COMPANY
MOSINEE, WISCONSIN

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NOW! Immediate delivery on low-cost ultrasonic cleaning equipment you can afford!

Priced from $175.00 — full 2-year warranty

Series 600 $350

SPECIFICATIONS
Inside tank dimensions: (Model NT-602) 9¼" x 6" x 5"; one gallon capacity; stainless steel.
Generator: 10" x 8½" x 9½"; 115V-AC; selector switch to alternate between two tanks.
Complete unit is portable and compact.

narda SONBLASTER

Now, thanks to Narda's mass production techniques, you can get top ultrasonic cleaning equipment with a full two year guarantee, at the lowest prices in the industry! What's more, Narda's new SonBlasters are available now — off-the-shelf — for immediate delivery!

Plug the Narda SonBlaster into any 115V-AC outlet — fill the tank with the cleaning solution of your choice and flip the switch. In seconds, you'll be cleaning everything from hot lab apparatus to medical instruments, optical and technical glassware to clocks and timing mechanisms, electronic components and semiconductors to motors, relays and bearings. In short, you'll clean almost any mechanical, electrical, electronic or horological part or assembly you can think of — and do it faster, better and cheaper.

Narda SonBlasters — a complete line of production-size units with the quality, power, performance, capacity and appearance of cleaners selling up to three times the price. From $175 to $1200.

For more information, write to: Dept. NED-1

the narda ultrasonics corporation
HERRICKS ROAD, MINEOLA, L. I., NEW YORK
Subsidiary of The Narda Microwave Corporation

▲ For more details circle **NED-411 E8** on enclosed inquiry slip ▲

Hardness Readings in 2 seconds!

Webster PORTABLE **Hardness Testers** FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

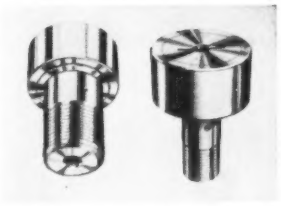
Other models available

WEBSTER INSTRUMENTS, INC. Dept. N, 11856 Mississippi Ave. Los Angeles 25, California

▲ For more details circle **NED-412 E8** on enclosed inquiry slip ▲

CAM FOLLOWERS

have high radial load capacity

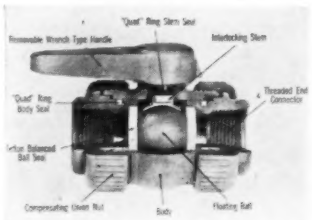


Heavy - sectioned outer races of this line of cam follower roller bearings are made of through - hardened ground bearing steel. They have high radial load - carrying capacities and shock resistance. Small diameter rollers are uniform in size, and studs are heat-treated for roller track hardness. Conventional passages are provided for use with drive type fittings, or they can be sealed with furnished plugs. Standard and heavy duty plugs are available with or without seals. Twenty-two standard sizes from ½ to 4-in. OD are offered in plain steel, chrome and cadmium plating, or black oxide finish by **Orange Roller Bearing Co.**, 552 Main St., Orange, N. J.

▲ For more details circle **NED-413 E8** on enclosed inquiry slip ▲

ALL-PLASTIC VALVE

made of rigid polyvinyl chloride

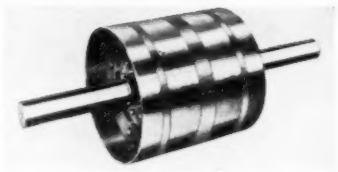


Because it has no metal parts, this inexpensive, rigid Koroseal polyvinyl chloride, ball valve will not rust or corrode. Design affords easy take-up for wear and quick parts replacement. Full flow is afforded without turbulence by round port. Teflon seats cannot stick or gall. Union nuts facilitate positioning and disassembly. Recommended working temperatures for the ½ to 1½-in. sizes range from 140 psi at 100° F to 70 psi at 130° F. Corresponding working pressures for the 2 and 3-in. sizes are 100 psi and 50 psi. Made by **B. F. Goodrich Industrial Products Co.**, Plastics Div., Dept. ND-1, Marietta, Ohio.

▲ For more details circle **NED-414 E8** on enclosed inquiry slip ▲

CERAMIC MAGNET PULLEY

made in 12 to 24-in. diameters



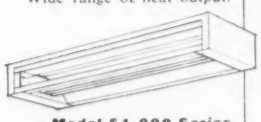
Indox V ceramic permanent magnets energize this pulley for removal of tramp iron from fast-moving conveyor burdens. Performance equals that of electromagnetic types. It is achieved with radical pole design of the magnet assembly. Series 410 pulleys and the Series 710 for deeper conveyor burdens are available in standard widths beginning at 12 in. and in 12, 15, 18, 20, and 24-in. diameters. Larger sizes can be supplied. Made by **Indiana Steel Products Co.**, Stearns Magnetic Products Div., Dept. L, 635 S. 28th St., Milwaukee 46, Wis.

▲ For more details circle **NED-415 E8** on enclosed inquiry slip ▲

Assemble these FOSTORIA INFRA-RED SECTIONS

easily and at low cost for many heating jobs

Model 48-000 Series sections use G-30 lamps in 125, 250, 375 and 500 watt sizes. Low first cost. Efficient, economical operation. Wide range of heat output.



Model 51-000 Series sections use quartz lamps, quartz tubes, or metal rods. Ideally suited for a wide range of heating jobs. Choice of aluminized or gold reflectors.

Complete set of parts available . . . full instructions provided

Many uses include spot heating jobs, laboratory applications, production heating, baking, drying, degreasing, curing, etc. Save time and cut processing costs.

Features. Precision built sections. Top quality materials. Exceptionally high efficiency rating. Sections available in various lengths and widths.

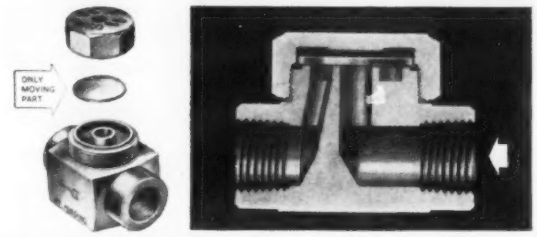
Easy assembly. Any maintenance or electrical worker can assemble with instructions provided. Portable or permanent type ovens can be assembled from Fostoria parts.

Available through electrical wholesalers everywhere. Ask for free literature and specifications. Or write direct to factory: Dept. N558.

THE fostoria PRESSED STEEL CORPORATION
Fostoria, Ohio 5801

LARGEST MANUFACTURER OF COMPLETELY ENGINEERED INFRA-RED OVENS AND COMPONENTS IN U.S.A.

▲ For more details circle **NED-416 E8** on enclosed inquiry slip ▲



SIMPLEST STEAM TRAP

Trouble-free design practically eliminates maintenance

1. *No complicated mechanism!* Look at the cross-section above. Not a pin, lever, gasket or bucket in sight! There aren't any . . . in the practically trouble-proof Sarco TD . . . simplest of all steam traps.

2. The kinetic energy of steam closes the valve. No mechanism needed.

3. Only 3 simple, rugged parts (not assemblies) . . . made of stainless steel. Only 1 moving part.

4. No narrow channels to choke. No gaskets to leak.

Ask for 60-day trial

We'll send you Sarco TD steam trap, strainer. No cost or obligation. Buy *only* if completely satisfied. Advise size—⅜, ½, ¾ or 1"—and use. Sarco Co., Inc., 635 Madison Ave., New York 22, N. Y.

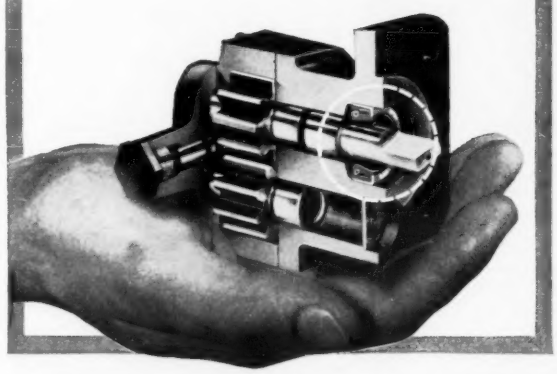
2242-F

SARCO Thermo-Dynamic TRADE MARK **STEAM TRAP**

THE MODERN TRAP THAT IS MAKING STEAM TRAPPING HISTORY!

▲ For more details circle **NED-417 E8** on enclosed inquiry slip ▲

Champion performance in a fist-sized pump . . . sealed by C/R



THE PROBLEM:

To seal a rotary pump handling a wide range of fluid viscosities, pressures and temperatures.

These pumps are performing dependably in hundreds of different hydraulic applications. They handle any fluid with lubricating qualities . . . deliver up to 180 gph, and maintain high volumetric efficiency even with low viscosity fluids. For dependable sealing, C/R's Type HMS Oil Seal was chosen. It performs effectively from 28" Hg to 5 psi, and from 50 to 8000 rpm. This is only one of the thousands of ways in which C/R Oil Seals are solving difficult sealing problems throughout industry. C/R engineers can help you, too. A letter or telephone call will get them started. Write for your copy of the catalog, "C/R OIL SEALS".

More automobiles, farm and industrial machines rely on C/R Oil Seals than on any similar sealing device.

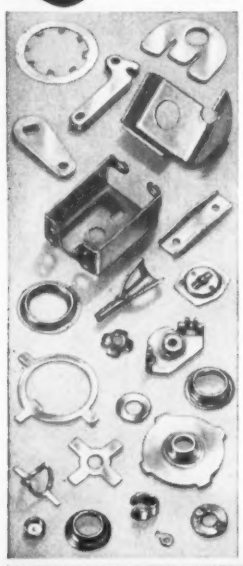
C/R OIL SEAL DIVISION

CHICAGO RAWHIDE

CHICAGO RAWHIDE MANUFACTURING COMPANY
1271 Elston Avenue • Chicago 22, Illinois
Offices in 55 principal cities. See your telephone book.
In Canada: Manufactured and Distributed by Chicago Rawhide Mfg. Co. of Canada, Ltd., Brantford, Ontario.
Export Sales: Geon International Corp., Great Neck, New York

▲ For more details circle **NED-418 E8** on enclosed inquiry slip ▲

Quadriga® means Quality metal stampings



Quadriga specializes in the manufacture of custom-made stampings to close tolerances. Using the most advanced machinery and methods, Quadriga can provide the *exact* stamping required to fill your application—any metal, medium to high quantity runs. Depth of draw to 3½ inches—press. capacities to 150 tons.

Quadriga also manufactures custom-made flat, friction, tension and finishing washers as well as wire terminals in thousands of special sizes and shapes.

Send b/p or specs for estimate. Request catalog on your company letterhead.

® Reg. U. S. Pat. Off.

THE Quadriga MFG. CO.
221 WEST GRAND AVE. • CHICAGO 10, ILL.

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NEW exclusive design!

T-J REAMERS

CUT REPLACEMENT COST MORE THAN HALF!

Exclusive in design . . . the New-type T-J Reamers cut your replacement costs to *less than half!* Only the quickly installed *head* to replace, after buying original shank. Wide range of interchangeable heads from ½" to 2-3/4" inclusive, in 1/16" increments available . . . right or left hand spiral flutes. Tapered hole in head insures concentricity and *new* thread design assures a snug fit on smoothly tapered shank. Quick change of heads saves time. Head and arbor firmly locked together.

Left hand spiral, right hand cut. Right hand spiral, right hand cut.

39 Years Experience

T-J TOMKINS-JOHNSON
RIVETOUS...AIR AND HYDRAULIC CYLINDERS...CUTTERS...CLINCHORS

The Tomkins-Johnson Co., Jackson, Michigan

▲ For more details circle NED-421 E8 on enclosed inquiry slip ▲

flexible plastic TUBING

Tygon Tubings combine true flexibility, glass clear transparency and exceptional resistance to corrosion. The many formulations provide superior service under a wide range of service conditions.

Some formulations are tasteless, odorless, non-toxic for high purity solutions such as plasma, drugs, liquid foods and milk products. Others handle corrosive gases and liquids and are chemically inert to attack by acids, alkalies, oils and alcohol. Still others withstand pressures to 300 p.s.i. or full vacuums. All formulations are physically tough, withstand rough usage and provide longer useful service.

Tygon tubings are installed in minutes. Cleaning is simplified by the highly polished bore. Fifty-five sizes from 1/16" through 3" provide a size for virtually every use.

Send for Bulletin T-97 today.

Plastics and Synthetics Division
U. S. STONEWARE
AKRON 9, OHIO 387E

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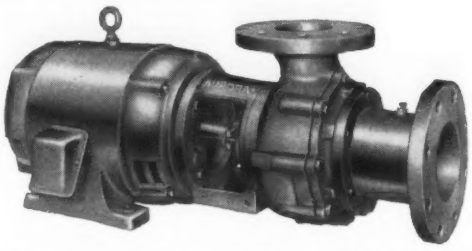
END-SUCTION PUMPS
vertical and horizontal types

Circulating, coolant, cooling tower, condensate return, booster, hot water, tank mounting, filter, and sprinkler systems are applications for Type BC end-suction,

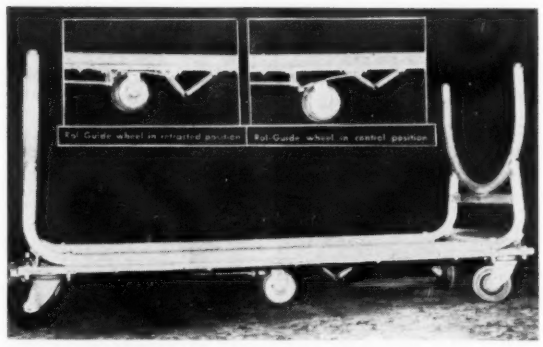


general purpose pumps. Close-coupled horizontal, flange-mounted vertical, base-mounted vertical, and pedestal-mounted horizontal units are offered. Pumps are changed from packing to seals by using interchangeable mechanical seal, packing, water-cooled stuffing box with mechanical seal, or water-cooled packing box. Shaft seals are bronze, and case wearing rings are nickel-iron. Sizes range from ¼ to 40 hp at 2500 rpm and from ¼ to 20 hp at 1750 rpm. Made by **New York Air Brake Co.**, Aurora Pump Div., 37 Dearborn St., Aurora, Ill.

▲ For more details circle NED-423 E8 on enclosed inquiry slip ▲

TUBE, PIPE & BAR CARRIER
retractable fifth wheel enables one man to handle loads to 4000 lb

Used as a rolling storage rack or as a transporter of materials, the Rol-Away Model T-RG bar stock, tubing, extrusion, pipe, and sheet roll carrier handles loads



up to 4000 lb. Made of 1¼-in. aluminum alloy pipe, it has a Rol-Guide rigid, retractable fifth wheel mounted under the center of the truck. When retracted, the truck handles in a conventional manner on four corner swivel wheels.

Flip of a foot lever locks the Rol-Guide into position for improved maneuverability. The heavily loaded truck can then be moved and positioned by one man. Rol-Guide can be applied to other Rol-Away models, as well as trucks of other makes. Made by **Rol-Away Truck Mfg. Co.**, Dept. N, 6143 S. E. Foster Rd., Portland 6, Oreg.

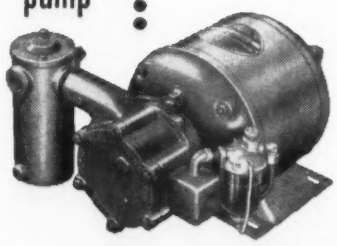
▲ For more details circle NED-424 E8 on enclosed inquiry slip ▲

NEED VACUUM?

use the COMPACT pump

The Motoair Pump is built integral with its own motor to take the least amount of space and to avoid extra assembly necessary with separate drive.

Automatic lubrication complete with re-circulating system and visible oil reservoir is a feature of



the MOTOAIR®

Instantaneous suction and positive action is provided with the Motoair, being directly driven at the same rpm. as the motor.

ASK FOR CATALOG with performance data on various sizes of pumps Oil-less models also available.

824

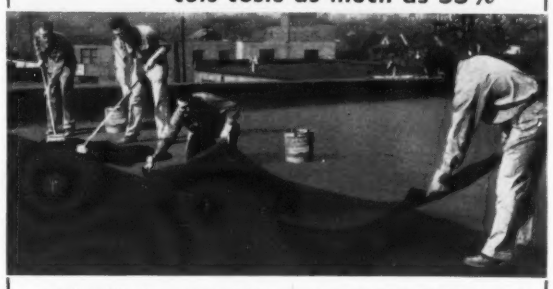
NEW JERSEY MACHINE Corporation

FACTORY SALES AND SERVICE BRANCHES
CHICAGO, CINCINNATI, LOS ANGELES

1550 WILLOW AVENUE, HOBOKEN, N. J.

▲ For more details circle NED-425 E8 on enclosed inquiry slip ▲

NEW RE-ROOFING METHOD
cuts costs as much as 55%



A simplified process which saves up to 55% of the installation costs for new roofs is now available from The Monroe Company. Known as the Monroe VULCA-DEK system, this method eliminates the expense of removing old roofs and does away with heating of roof coating, hot mop applications and use of gravel. Fire danger is completely eliminated.

Key to the VULCA-DEK process is the use of 3 Monroe roofing products. Among these are Hold-Tite, an extremely adhesive sealing cement which "vulcanizes" new felt to the old roof surface, heavy-duty 53-lb. roofing felt and Siliconed Rufferseal.

Monroe Siliconed Rufferseal is spread over the repaired surface as the final step in the installation of the new built-up VULCA-DEK roof. It is composed of long fibre Canadian asbestos, imported and domestic asphalts and special penetrating oils. Siliconed Rufferseal, and a companion Monroe product, Siliconed Asbestolite, are the only roof coatings now compounded with silicones. Monroe Asbestolite, which can be used in the VULCA-DEK system instead of Rufferseal, contains pure metallic aluminum flakes in homogenous suspension. When the coating is applied, these flakes produce a brilliant, attractive aluminum roof.

Monroe VULCA-DEK roofing specifications are adaptable to construction of both single-ply and 2-ply built-up roofs. Full details are given in Form No. 1090. **The Monroe Company, Inc., 10720 Quebec Avenue, Cleveland 6, Ohio.**

▲ For more details circle NED-426 E8 on enclosed inquiry slip ▲

New low-cost copy maker

...makes copies in 4 seconds

It's All-New and All-Electric! This newest THERMO-FAX "Secretary" Copying Machine gives you copies of orders, letters, invoices, statements or other business data right when you need them. You make copies in 4 fast seconds for as little as 5¢ each. Eliminates chemicals, negatives and special installations. And you get these advantages of the only dry process copy maker for just $299*. Send for complete details today.

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Thermo-Fax BRAND COPYING PRODUCTS

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Tempilstiks°

FOR ALL HEAT-DEPENDENT OPERATIONS . . .

looks like a crayon
marks like a crayon
tells temperatures like
a precision instrument

Sixty-three different compositions enable you to determine and control working temperatures from 113° to 2000°F. TEMPILSTIK° marks on workpiece "say when" by melting at stated temperatures — plus or minus 1%.

Also available in liquid and pellet form . . . Write **Advertising Division** for sample TEMPIL° pellets. . . State temperatures of interest — please!

Tempil°
CORPORATION
132 WEST 22nd STREET, NEW YORK 11, N. Y.

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NEW POWER FROM WASTE STEAM

TROY Steam Engines

Save dollars with "by-product" power from waste steam used for processing or heating—Generating low-cost electric power or drive stokers, fans, pumps, compressors, and other plant equipment. Efficient even against high back pressure.

Type E. Steam Engine, 12½ hp. to 100 hp.

TROY Generator Sets

Complete units A.C. or D.C., vertical and horizontal. Capacities up to 60 KW and 94 KVA. Reduces costs for power by eliminating premium rates. Essential source of stand-by power.

Investigate this source of cheaper power for your plant.

Send for Bulletin 308—Troy Vertical Steam Engines
Bulletin 307—Horizontal Steam Engines
Bulletins 109 AC, 110 DC—Generator sets

TROY ENGINE & MACHINE CO.
70 Parsons Street, Troy, Pennsylvania Tel: Troy 32

▲ For more details circle NED-429 E8 on enclosed inquiry slip ▲

PE

A PROMPT DEPENDABLE MILL SOURCE

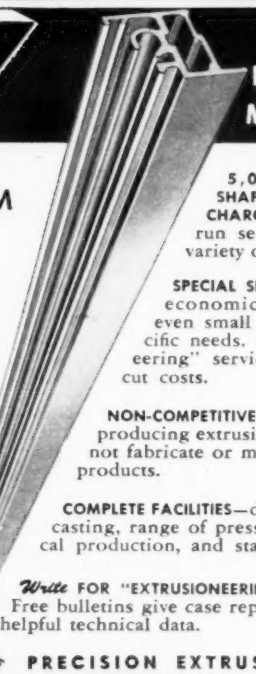
EXTRUDED ALUMINUM

SHAPES

TUBES

RODS

BARS



5,000 STANDARD SHAPES WITHOUT DIE CHARGE—prompt mill-run service on a wide variety of shapes.

SPECIAL SHAPES — quickly, economically produced, even small runs, to fill specific needs. Free "Extrusioneering" service to help you cut costs.

NON-COMPETITIVE MILL SERVICE — producing extrusions only. We do not fabricate or manufacture other products.

COMPLETE FACILITIES—die making, billet casting, range of presses for economical production, and standard finishing.

Write FOR "EXTRUSIONEERING NEWS" Free bulletins give case reports and helpful technical data.

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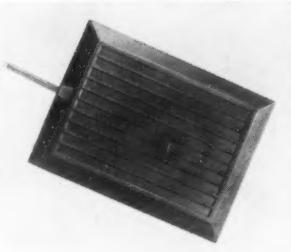
PHONE: POrter 6-0098 • (Chicago) TUxedo 9-1701

Chicagoland's Oldest, Most Experienced Aluminum Extruder

REGIONAL SALES OFFICES: ST. PAUL MIdway 6-2887 MILWAUKEE BRoadway 3-6446 GRAND RAPIDS GLendale 1-2511

▲ For more details circle NED-430 E8 on enclosed inquiry slip ▲

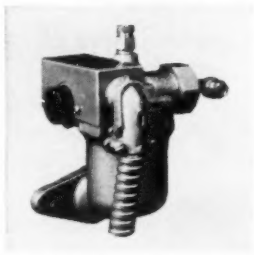
ELECTRICAL FOOT SWITCH
waterproof unit can be submerged



Waterproof construction of the Neptune ½-in. thick electrical foot switch allows it to be submerged in water for either operation or cleaning. Designed for control and low-power circuits, switch is practical for electrically-operated equipment under severe environmental conditions. Electrodes are embedded in flexible vinyl plastic which is resistant to oils, greases, and common chemicals, as well as water. Switch measures 6 x 8 in. and is offered in brown, blue, green, and gray colors. Made by **Recora Co.**, Dept. E-3, 6100 S. Archer Rd., Summit, Ill.

▲ For more details circle NED-432 E8 on enclosed inquiry slip ▲

AIR COMPRESSORS
now have oil monitoring device



Now standard equipment on 1958 Champion stationary and portable air compressors of 1½ to 10 hp is this Oil Monitor, a protective device which prevents recycling when compressor crankcase oil level falls below safe limit. Recycling can only be accomplished by operator pushing a button on side of the Monitor. Even then compressor will cut off automatically at next cycle until oil is added to bring up level. Made by **Champion Pneumatic Machinery Co.**, Dept. N, Princeton, Ill.

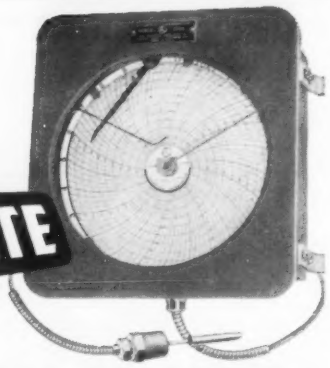
▲ For more details circle NED-433 E8 on enclosed inquiry slip ▲

VIBRATION PICKUPS
monitor jet engines, motors

Operable over a −65 to 500° F temperature range, Type 4-121, 4-122, and 4-123 vibration pickups are suited for in-flight monitoring of jet engines as well as motors and generators. They will perform in oily or corrosive atmospheres, or in the presence of sand, dust, or fungus. The three pickups differ internally to allow horizontal, vertical, or omnidirectional mounting. The 4-121 and 4-122 will monitor turboprop vibrations from 15 to 2000 cps, whereas the 4-123, with its 45 to 2000 cps range, is suited for jet-engine work. All three are air-damped. Made by **Consolidated Electrodynamics Corp.**, Sierra Madre Villa & La Tierra St., Pasadena 8, Calif.

▲ For more details circle NED-434 E8 on enclosed inquiry slip ▲

A NEW Development from AUTO-LITE



INKLESS TEMPERATURE RECORDER!

The newest advance in temperature recording . . . Auto-Lite model 2200 operates completely without ink. It simplifies temperature recording for most processing operations.

- 2 small mercury batteries in case energize transistor oscillator connected to stylus arm.
- Stylus records temperature on 6" evenly calibrated sensitized chart.
- Battery life approximates 2000 hours.
- Records operating temperatures for 24-hour or 7-day cycles.
- Easily serviced — minimum maintenance.

THE ELECTRIC AUTO-LITE COMPANY
INDUSTRIAL INSTRUMENT DIVISION
TOLEDO 1, OHIO
NEW YORK • CHICAGO • SARNIA, ONTARIO

Electric or mechanical chart drive available for either 24-hr. or 7-day rotation. In wall mounting, portable and self-contained type cases. Remote reading with capillary tubing. Temperature charts in ranges from −40°F to +550°F. Write for further information.

TEMPERATURE RECORDERS & INDICATORS

▲ For more details circle NED-435 E8 on enclosed inquiry slip ▲

CUT HANDLING COSTS - - - STOCK MORE IN LESS SPACE

LOW-COST, STACKBIN-IN-STACKRACK UNITS PAY FOR THEMSELVES IN 3 WAYS

SAVE SPACE — Individual units stack easily and lock securely as high and as long as you need. Seven different size units available.

SPEED PRODUCTION — Stackbins reduce handling time. Can be used intra-plant in processing, sub-assembly, assembly and stockroom. Roller Bearing Slide Stackracks available for heavier contents. Locking Pallets supplied for unit load handling.

REDUCE INVENTORY TIME — Accessibility of Stackbins for weight count speeds inventory taking; visibility of contents simplifies control.

STACKBIN-IN-STACKRACK COMBINATIONS are made of heavy gauge steel with all welded construction and baked enamel finish.

LOW-COST STACKBIN PRODUCTS ARE SOLD DIRECT — A factory trained, Stackbin Sales Engineer will study your plant requirements, at no obligation, and will make specific recommendations for handling and storage efficiency. Buy only as many units as you need.

WRITE TODAY FOR FULL INFORMATION
STACKBIN CORP. 1081 Main St., Pawtucket, R. I.
Mfd. & sold exclusively in Canada by: Wickware-Stackbin, Ltd., Ottawa

STACKBIN® SYSTEM "Stacked and Still Accessible"

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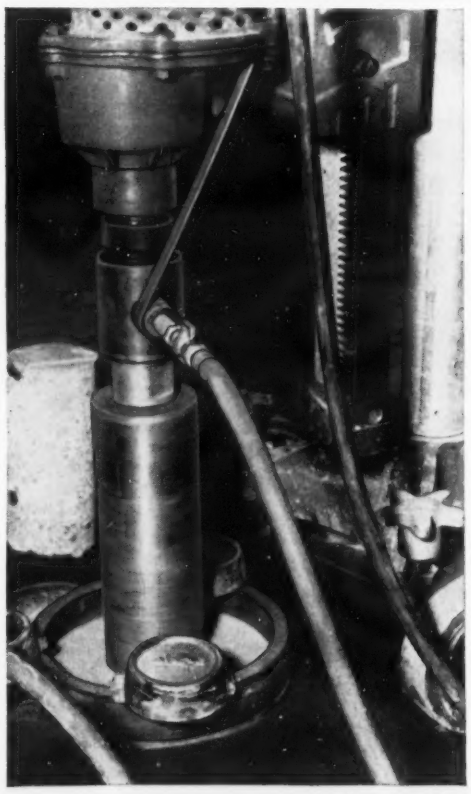


TIME FOR DRILLING 3½" HOLES THROUGH 10" REINFORCED MERAMEC GRAVEL CONCRETE FLOOR CUT FROM 6 HOURS TO 30 MINUTES

JOB: Cut 150 holes 3½" diameter through 10" concrete floors for new conduit feeders in the warehouse section of the old Mart Building, now the St. Louis Area Support Center, St. Louis, Mo. The Building, constructed in 1932, was built of concrete containing Meramac gravel aggregate—"the next thing to flint". Chiseling these holes would have resulted in jagged and uneven holes, much dirt and noise, a big clean-up job and much patching to finish up the job and would have averaged six hours each for two men.

CONTRACTOR: The Sachs Electric Corporation, St. Louis, Mo.

TOOLS: Model C Truco Diamond Drilling Machine with 350 rpm motor and 3½" O.D. Truco Diamond Drill Bit.

DESCRIPTION: Truco unit was used mounted on its mobile base and moved to location on its rubber tired wheels. Actual drilling time on each hole was from 6 to 9 minutes depending upon the number of reinforcing rods to be cut. Each completed hole averaged 30 minutes including all moving, set-up and core removal. (Compare with previous 6 hours for two men with air hammers.) Completed hole was clean and smooth and no patching needed. Truco unit is completely portable by one man and is designed for high speed drilling in practically any location. Wired for 110 V, 60 cycles or less.

WRITE FOR NAME OF NEAREST DISTRIBUTOR

Truco Swivel Division
WHEEL TRUEING TOOL CO.
20-3200 W. Davison Ave. • Detroit 38, Michigan

▲ For more details circle NED-431 E8 on enclosed inquiry slip ▲

NEW DEPARTURE

NEW DEPARTURE

NEW DEPARTURE

Symbol of a Reputation

. . . a reputation for integrity, for quality and service . . . for advanced creative engineering achieved by New Departure in over half a century of precision ball bearing manufacture.

This emblem is also symbolic of our determination to continue, in the fullest measure, all those factors which have built that reputation. It is a visual pledge of this resolution to all our customers, present and future.

1908—1958 GM FORWARD FROM FIFTY

NEW DEPARTURE

DIVISION OF GENERAL MOTORS—BRISTOL, CONN.

For more details circle NED-437 E8 on enclosed inquiry slip

DELIVERY TODAY

SOLDERING IRON

"For High-performance Industrial Use"

of Popular General Electric Heaters and Devices

Now you can get popular G-E heaters and devices from stocks near your plant.

NO WAITING: A new General Electric stocking plan means you get quick delivery from local distributors whenever you need the convenience of fast, clean electric heat. Vital equipment can be restored to operation promptly. Favorite "do-it-yourself" heating projects can be completed without delay. You can get the General Electric heater you need—right at the time you need it.

TELEPHONE: Call your General Electric Apparatus Sales office today for the name of your G-E stocking distributor for heaters and devices. Section 723-19, General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC

For more details circle NED-438 E8 on enclosed inquiry slip

BURR-BIT CUTS TAPPING COST WAY DOWN!

Just lock Burr-Bit on any make tap and holes are deburred automatically, leaving a smooth clean chamfer. *ONE operation, ONE setup, ONE handling.*

NEW ADDITION
Now Burr-Bit fits 3 fluted taps from #6 to ½". Also available to fit any tap 2 or 4 fluted from #2 to ¾", as well as heli-coil.

A quality product made of the finest high speed tool steel for use on almost every material.

WRITE now for complete data and reports from engineers who have adapted Burr-Bit and saved on *their* tapping operations.

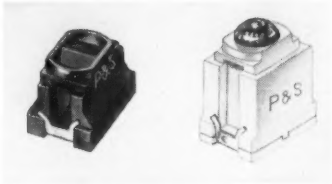
INVESTIGATE Burr-Bit today.

VERNON DEVICES, Inc.

481 E. 3rd Street Mt. Vernon, N.Y. MOunt Vernon 4-1686

For more details circle NED-439 E8 on enclosed inquiry slip

PILOT LIGHT & OUTLET wiring devices are interchangeable

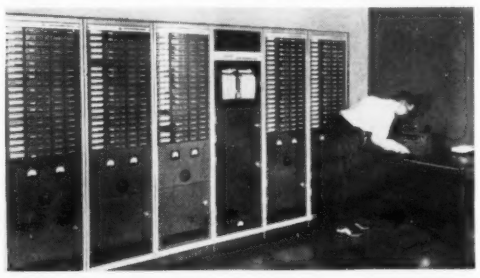


Pressure type terminals which take No. 12 or 14 solid wire are a feature of two interchangeable brown or ivory Despard wiring devices, the No. 1374 flush neon pilot light and the 1325 outlet. Two wire openings for each side of the circuit permit feed-through wiring. Pilot light has a long-life, 1/25-w neon lamp which gives off no heat, and a prismatic dome of unbreakable red Plexiglas. Rating is 125 v. The 115-v, 15-amp outlet has double-wipe contacts which grip both sides of the plug blades. Combinations of two or three of these or other Despard devices can be assembled together. Made by **Pass & Seymour Inc.**, Dept. PD-2, Solvay Station, Syracuse 9, N. Y.

For more details circle NED-440 E8 on enclosed inquiry slip

PRODUCTION MACHINE MONITOR registers output, operating time of up to 20 remotely located machines

Every piece of production equipment in a plant can be linked to a central dispatch room by the electromechanical Hancock Telecontrol, a simple production



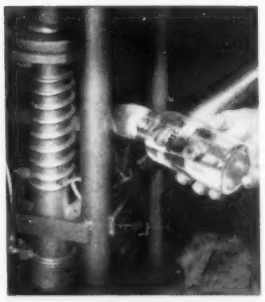
control monitoring system. Each production machine or subassembly station in the installation contains a small box consisting of green and red lights, toggle switch for machine operator use, and phone jack and key-actuated switch for foreman use.

Low voltage wires connect each machine to the dispatch room where it is represented on a display panel by red and green lights and four electromechanical registers. These indicate the number of pieces produced, total machine operating time, total downtime, and pieces to go to complete any given production order.

Red and green lights signal whether a machine is operating normally, needs attention, or is standing by on downtime. The Telecontrol uses a public address and telephone link for foremen and supervisory personnel. Standard "package" consists of one monitor and ten control cabinets which can serve up to 20 machines each. Cost is about $250 per machine in a 200-machine installation. Made by **Control Systems Co.**, 225 N. Horton St., Jackson, Mich.

For more details circle NED-441 E8 on enclosed inquiry slip

DIFFUSION PUMP OIL COSTS CUT IN HALF



If you operate a vacuum system at pressures below a micron, chances are that Narcoil-40® can halve your diffusion pump oil costs and give better performance, too! That's because multipurpose Narcoil - 40 combines the best features of special purpose diffusion pump oils costing several times as much. It gives you high forepressure tolerance, untrapped blank-offs to 2 x 10^{-7} mm Hg., plus high oxidation resistance and chemical stability. Jets stay clean for months. Pints $7.75; Quarts $14.50; Gallons $38.50; 55 gallon drums $24.50 per gallon.

Sound too good to be true? Order some today, and if you're not completely satisfied, we'll refund your money PLUS $5.00 for your trouble. For more information on Narcoil-40 or Narcoil-10, its companion oil for booster diffusion pumps, write today. **NRC EQUIPMENT CORP.**, Dept. 29-S, 160 Charlemont Street, Newton 61, Mass. Advt.

For more details circle NED-442 E8 on enclosed inquiry slip

DON'T throw away WORN OUT GLOVES!

PLASTIC · LEATHER · FABRIC

Check GLOVCO first!

GLOVCO'S service makes worn out gloves safe and good as new at fraction of original cost.

● Yes, before you throw away your old worn out gloves, check GLOVCO'S nationwide service first! GLOVCO is saving industry up to 90% on gloves they once threw away. GLOVCO reclaims worn dirty plastic, leather and fabric gloves, welder's gloves, mitts, hand pads. Also hot mill, terry cloth, asbestos aprons and gloves, sleeves, drop cloths, protective clothing, etc. GLOVCO service is used in thousands of plants from coast-to-coast. Write for details and FREE trial demonstration. Satisfaction guaranteed.

GLOVCO also offers a variety of NEW GLOVES at great savings. ●

U.S. INDUSTRIAL GLOVE CORP.

9350 Roselawn Avenue • Detroit 4, Michigan

For more details circle NED-443 E8 on enclosed inquiry slip

INCREASE PRODUCTION 50%

WITH AIR HYDRAULIC PRESS AND INDEX TABLE

IT'S BEEN DONE—for a "big 3" auto company. Tooling shown increased production on press assembly of steering knuckles from 1200 to 1800 pieces per hour—with added operator safety.

COMPLETE SET-UP—#1405 Air Index Table, #C-300 5½ Ton Press, controls and fixtures were furnished by Air-Hydraulics, Inc. An electrical circuit synchronizes press and table for fully automatic operation on standard line pressures. Operator places pieces on fixture outside guard • Parts are indexed into position and pressed together • Assembly is removed automatically and chuted into container. Constant pressure throughout ram stroke has eliminated previous trouble caused by variations in stock thickness and other factors.

REPRESENTATIVES—Some territories still open. Write for information.

OUR NEW CATALOG IS READY NOW. Write for yours today.

AIR-HYDRAULICS INCORPORATED

816 HUPP AVE. • JACKSON, MICHIGAN

For more details circle NED-444 E8 on enclosed inquiry slip

NEW

*T-WEDGE KLEENSLOT

(preparation screen)

"T" and "WEDGE" wire combine to create the ultimate in...

GUARD BAR DESIGN -high "T" profile wire between every wedge shaped wire performs as guard bar *and* screen

GUARD BAR ECONOMY -new design effects added screening surface, small screen efficiency with large screen life

with ***I. F. A.**—*independent flexing action*

Especially adaptable for flumes or vibrator applications — can easily be interchanged with other types of Kleenslot screens without mechanical changes — abrasion resistant stainless steel

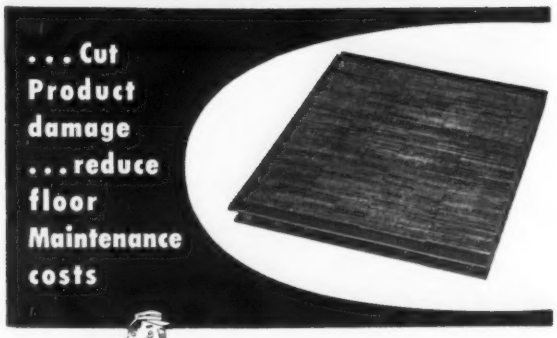
**patent applied for*

for additional information—write

WEDGE-WIRE CORPORATION Wellington, Ohio

For more details circle NED-445 E8 on enclosed inquiry slip

NEW! FLEX-O RUBBER FLOOR PADS

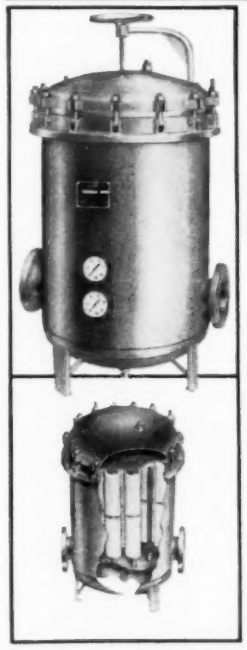


■ Now you can protect dropped products and floors with low cost FLEX-O floor pads. Built for heavy duty service, they are made with steel channel frames and laminated segments of resilient rubber reinforced fabric. They are available in two standard sizes for use on the floor and for recessing into specially built floor pockets.

Write for detailed literature.

BUMPERS, INC.
Subsidiary of Rowe Methods, Inc.
2534-F Detroit Ave. • Cleveland 13, O.

▲ For more details circle **NED-446 E8** on enclosed inquiry slip ▲



NEW! HI-CAPACITY *Fulflo Filter*

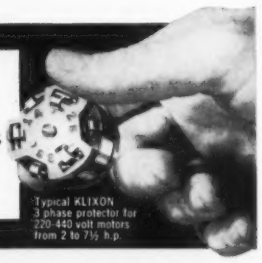
This compact sturdy steel filter (Model WH) is available in a full range of sizes — with from 24 to 270 10-inch Honeycomb Filter Tubes. It provides continuous micro-clarity for industrial liquids and gases at flow rates as high as 1350 gpm or more, depending on viscosity, with minimum pressure drop. New swing-bolt cover (with optional cover-lifting device) simplifies servicing. Pressure gauges also optional. *For new folder, write to Department NE.*

COMMERCIAL FILTERS CORPORATION
MELROSE 76, MASSACHUSETTS
PLANTS IN MELROSE, MASSACHUSETTS AND LEBANON, INDIANA

▲ For more details circle **NED-447 E8** on enclosed inquiry slip ▲

Do you get what you expect from motor protection?

Here's what KLIXON Inherent Overheat Motor Protection Gives You


Typical KLIXON 3 phase protector for 220-440 volt motors from 2 to 7½ h.p.

- Elimination of Motor Burnouts
- Maximum Output of Motor under any Overload
- Minimum Motor Repair and Replacement
- Simplified Motor Controls
- Least Production Down Time

What you expect is not always what you get with conventional motor protection. But with KLIXON inherent overheat motor protection you get a matched combination of motor and protector — either single phase or three phase — tested and installed by the motor manufacturer.

You know you're getting the best possible protection against overheated motors caused by:

- Prolonged Overloads
- Stalling
- Failure to Start
- Lack of Ventilation
- Increase in Ambient Temperatures
- Plugging or Reversing Duty
- Unbalanced Voltage

Be sure you get everything you expect from motor protection, too — specify KLIXON protectors when you order motors. For full information, check with your motor supplier's district office or write us.

METALS & CONTROLS CORPORATION
Spencer Division 3305 Forest Street, Attleboro, Mass.
KLIXON

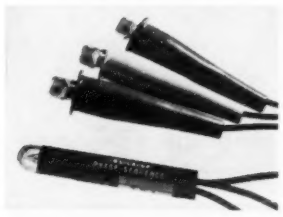
▲ For more details circle **NED-448 E8** on enclosed inquiry slip ▲

PACKAGED COOLING TOWERS induced draft type in 11 models

Reinforced polyesters, phenolic and Kralastic resins, and resin-protected laminates are utilized in construction of Permatower line of induced-draft cooling towers. Built for maximum resistance to corrosion, they use the double-flow design and are equipped with totally - enclosed motors. Fans operate quietly, and mechanical equipment is vibration-free in operation. Eleven models with ratings from 5 tons up are shipped assembled. Made by **Marley Co.**, 224 W. Gregory Blvd., Kansas City 14, Mo.

▲ For more details circle **NED-449 E8** on enclosed inquiry slip ▲

PHASE SEQUENCE INDICATOR is pocket-size instrument



Weighing only 6 oz and easily carried in a pocket, this phase sequence indicator detects and signals the sequence of three-phase power supplies. A resistance - capacitance sensing network drives the neon indicator lamp. Vinyl insulators cover the alligator clips for safety. Domed lens gives full visibility. It is available for 105 to 530 v and frequencies from 60 to 480. Made by **Master Specialties Co.**, Dept. A, 956 E. 108th St., Los Angeles 59, Calif.

▲ For more details circle **NED-450 E8** on enclosed inquiry slip ▲

SUBMERSIBLE MOTORS operate in oil, water, or chemicals

Available in ¾ through 15-hp capacities, line of polyphase, single-voltage, alternating - current, submersible motors is designed for direct coupling to pumps which must operate continuously while submerged in oil, water, or liquid chemicals. Universal mounting flange will connect directly to most pumps. Shaft serves as the pump shaft. Motors are oil-filled to give trouble-free performance when immersed at any depth. Ribbed cast iron frame is corrosionproof. Made by **Reliance Electric & Engineering Co.**, Dept. SP, 24701 Euclid Ave., Cleveland 17, Ohio.

▲ For more details circle **NED-451 E8** on enclosed inquiry slip ▲

Wolverine

TOGGLE CLAMPS

New QUICK ACTION MODEL CQ-1107
Includes These Important Features:

- ✓ HARDENED PINS and BUSHINGS
- ✓ BLACK OXIDE FINISH
- ✓ HEAVY BODY SECTIONS
- ✓ PINS RIVETED FLUSH
- ✓ DROP-FORGED ARM

Wolverine manufactures a full line of Toggle Clamps, including standard action–push action —and quick action units.

WRITE FOR BULLETIN

WOLVERINE TOOL CO.
1482 E. Woodbridge • Detroit 7, Mich.

▲ For more details circle **NED-452 E8** on enclosed inquiry slip ▲

ELLISCO

BRUSH TOP CANS

HAVE MANY ADVANTAGES ... MANY USES!

Use convenient, leakproof ELLISCO BRUSH TOP CANS for paints, pipe "dope", red lead, layout blue and your own products. Your servicemen, maintenance men, salesmen and customers will like these cans because they: SAVE TIME — brush fastened to can lid makes application easy; PREVENT WASTE — brush size is ideal for applying small quantities of liquids; INCREASE EFFICIENCY — they are easy to carry and always ready to use.

Write, wire or call for information and prices.

BAldwin 3-3405

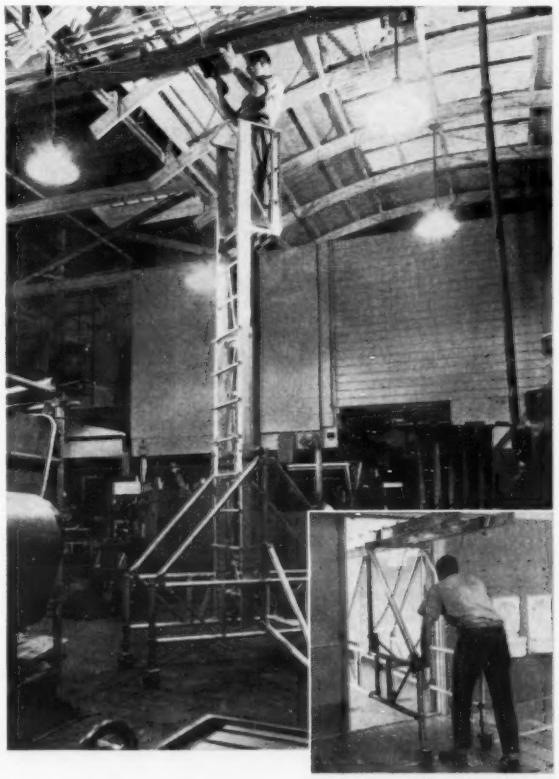
Ellisco
GEORGE D. ELLIS & SONS, INC.
4012 N. AMERICAN ST.
PHILADELPHIA 40, PA.

▲ For more details circle **NED-453 E8** on enclosed inquiry slip ▲

UP-RIGHT ANNOUNCES A NEW WORK PLATFORM

TALLESCOPE

...telescoping aluminum structure for overhead spot maintenance



Telescopes and folds down to roll through doorways, under trusses, pipes and conveyors.

Lightweight, rapidly assembled by one man. Extends instantly for reaching heights up to 30 ft. Adjustable legs for uneven floors or stairways. Only 29" wide for rolling through congested areas.

Separates easily into 3 components for convenient storage or transportation.

FOR

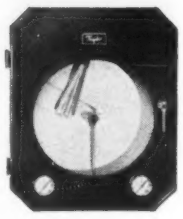
TALLESCOPE CIRCULAR
WRITE TO
UP-RIGHT SCAFFOLDS
DEPT. 175 • 1013 PARDEE ST., BERKELEY, CALIF.

Manufactured by UP-RIGHT SCAFFOLDS

▲ For more details circle **NED-454 E8** on enclosed inquiry slip ▲

20 Years the Standard of Control

TAYLOR FULSCOPE® CONTROLLERS



1. DEPENDABILITY Many FULSCOPE Controllers have been in continuous operation for twenty years or more, with practically no major service required.

2. ADAPTABILITY The basic control mechanism can be changed from the simplest to the most complete form, and to the measurement of any variable—in either recording or indicating models.

3. LOW MAINTENANCE In addition to being rugged and dependable, the FULSCOPE Controller is unusually easy to understand and simple to service.

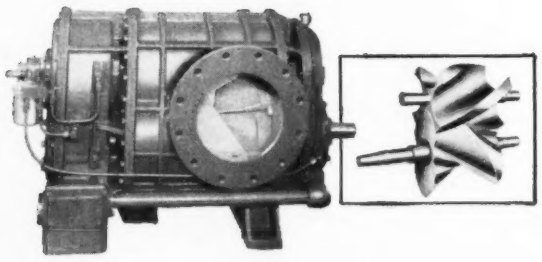
4. ECONOMY The few extra dollars for FULSCOPE quality are paid off by many extra years of trouble-free performance.

Taylor Instrument Companies, Rochester 1, New York, or Toronto, Ontario.

Taylor Instruments **MEAN ACCURACY FIRST**

▲ For more details circle **NED-456 E8** on enclosed inquiry slip ▲

I-R AXI-COMPRESSORS



AIR, GAS OR VAPOR PROBLEMS?

If you are interested in compressor efficiency for handling air, gas or vapor, investigate the I-R AXI-COMPRESSOR line. With unique axial-flow cycloidal design, the rotors never touch . . . need no internal lubrication . . . deliver oil-free air. More air with less power consumption. Sizes range from 100 cfm to 15,000 cfm, for vacuums to 25 inches, pressures to 15 psi. Details in Bulletin 11,001.

Ingersoll-Rand

17-662 11 Broadway, New York 4, N. Y.

Over 1000 types and sizes of I-R compressors . . . 1/4 to 6000 hp.

▲ For more details circle **NED-457 E8** on enclosed inquiry slip ▲

NEW DESIGN . . . FASTEST ACTION!

Completely re-designed from head to toe, Kidde's new Dry Chemical Fire Extinguisher gives you the fastest, most dependable kind of fire protection on the market today. Easier to use, packs more wallop, designed for functional fire-fighting even in hands of inexperienced help. Get full details, information, specifications, prices. Send coupon or write Kidde today.

Walter Kidde & Company, Inc.
524 Main St., Belleville 9, New Jersey

Please send me your P-40 catalog plus full information on your new pressurized 20 and 30 lb. dry chemical extinguishers.

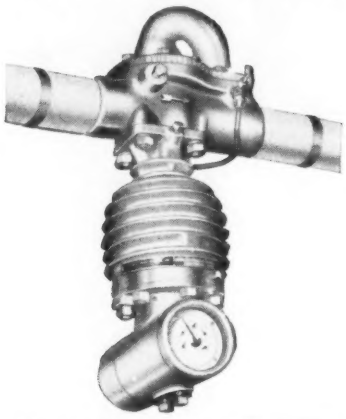
NAME _____

ADDRESS _____

CITY _____ STATE _____

▲ For more details circle **NED-458 E8** on enclosed inquiry slip ▲

STEAM METER
self-contained and self-operated



Equipped with a pressure-compensating counter box, the Shuntflo self-contained and self-operated steam meter automatically corrects for pressure variations in the steam line. Consumption is registered accurately in pounds of steam. Standard counter box can be replaced with the pressure-compensating counter box on meters in service. Readings have an accuracy of ±2 per cent. The pressure-compensating Shuntflo counter is available for separate installations on Model SMKS and SMDH meters, or can be obtained as a complete meter for 1 to 12-in. steam lines. Made by **Builders-Providence, Inc.**, 425 Harris Ave., Providence 1, R. I.

▲ For more details circle **NED-459 E8** on enclosed inquiry slip ▲

SONIC SIFTERS & FILTERS
high capacity units have many uses in handling various materials

Ability to separate particles of ½-in. diameter and larger to as fine as 30 microns (425 mesh) is a feature of Novo sonic sifting and filtering machines. The low power consumption machines reportedly handle up to five times the capacity of mechanically-activated machines by applying principles of sonic vibration to sifting and filtering operations. Such materials as chemicals, plastics, beet sugar, coal, coffee, and fertilizer, including wet materials, can be handled.

Superimposed upon the fundamental frequency in the lower sonic range is a series of harmonics which create violent vibratory action with very little screen flexing. Basic oscillation of 120 cps is built up to over 6000 cps. The mesh of the screen is agitated uniformly and directly, while the frame holding the screen and its support remains stationary. A number of models are available. Made by **United Specialties Co. of Illinois**, 9705 S. Cottage Grove Ave., Chicago 28, Ill.

▲ For more details circle **NED-460 E8** on enclosed inquiry slip ▲

7734-TE

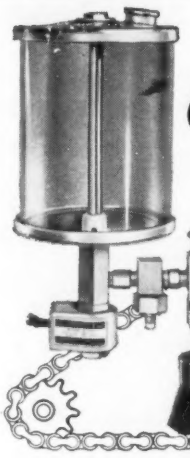
ONLY *Servisafe* POLES BRING LIGHTS AND MAINTENANCE COSTS DOWN-TO-EARTH

With SERVISAFE Poles, one man can **relamp** and clean luminaires in 5 minutes. He needs no special equipment or skills because all work is done at ground level with a "dead" fixture. Users report substantial long-range savings . . . new safety records.

FOR DETAILS AND PRICES . . . write today for Bulletin WPH-54.

THE THOMPSON ELECTRIC CO.
P. O. Box 873-F, Cleveland 22, Ohio

▲ For more details circle **NED-461 E8** on enclosed inquiry slip ▲



DOUBLE CHAIN LIFE!

Install **Oil-Rite** Automatic CHAIN OILERS

Here's the *low-cost answer to chain breakdowns* caused by link-wear, stretch, corrosion and friction. OIL-RITE Chain Oilers feed oil by gravity through solenoid and sight feed valve to brush which rides the chain. Solenoid *starts and stops with driving motor*, making operation automatic, oiling only when chain moves. Drop feeding adjustable. 9 oz. — 1 gal. in capacity with brushes to suit your chains.

GIVE YOUR PLANT ALL THESE BENEFITS!
- Safe, sure chain lubrication
- Reduce chain wear
- Eliminate costly hand oiling
- Cleaner, less hazardous floors

Many styles of Electro and Manual Chain Oilers available. Write for Free Bulletin.

Oil-Rite CORPORATION
2364 WALDO BOULEVARD
MANITOWOC, WISCONSIN

Oil Cups • Dispensers • Oiling Systems • Valves • Oil Gages • Chain Oilers

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MOST IMPORTANT IN CYLINDERS

DELIVERY ★ 24 HOURS AND DESIGN

Rugged, Leakproof, and 40% Savings in Space

Send For Complete Catalog File

All essential ordering details and specifications on the Carter line of cylinders and valves.

CARTER CYLINDERS

PHONE: BAyport 1-7186 (Chicago)

CARTER CONTROLS INCORPORATED
2876 Bernice Road, Lansing, Illinois (Chicago Suburb)

AIR CYLINDERS • HYDRAULIC CYLINDERS • AIR VALVES
ROTARY ACTUATORS • SPECIAL CONTROLS

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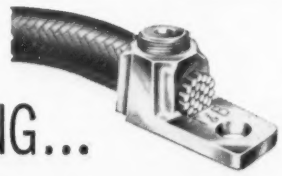


INTRODUCING...

the T&B ENGINEERED **CONE-SCREW LUG!**
for copper cable

A PERFECT WAY TO END THE JOB

This new series of connectors brings you greater ease and economy in terminating copper cable. The T&B *cone-screw lug* is a compact, one-piece connector, with extra wide cable range and exclusive non-tarnish, corrosion-proof finish. It's modern in appearance; modern in performance. Its positive wire-stop and tapered cone-screw make installation fast . . . and far more secure.

T&B *cone-screw lugs* are available to fit all popular conductor sizes, #14AWG to 500MCM. See your T&B distributor. He has the complete line in stock.

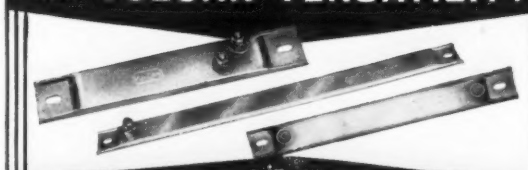
THE THOMAS & BETTS CO.
24 Butler Street, Elizabeth 1, N. J.
THOMAS & BETTS, LTD. Montreal, P. Q., Canada

EXTRA! Every standard package of T&B cone-screw lugs contains a free installing wrench . . . with plastic-cushioned handle.

▲ For more details circle **NED-464 E8** on enclosed inquiry slip ▲

SOLVE YOUR HOT PROBLEMS

with VULCAN VERSATILITY



in

STRIP HEATERS

Vulcan Electric Strip Heaters are especially designed for contact heating of dies, platens, molds, or any items with flat surfaces to which elements may be clamped; also as air heating source for ovens, air ducts, dryers, etc.

You have a wide choice of standard seamless one-piece sheaths — steel for sheath temperatures to 750°F, Chromalloy for sheath temperatures to 1200°F; lengths — 8" to 42½" (or longer); wattage — 150 to 1500 watts (or higher); rugged non-oxidizing terminal posts.

You get a speedy solution to your hot problems through Vulcan Versatility in standard or special units — strip, cartridge, tubular, immersion, finned, band or ring heaters. Send for catalog.

VULCAN

VULCAN ELECTRIC COMPANY • DANVERS 7, MASS.

Cartridge • Strip • Tubular • Immersion Electric Heaters
Soldering and Branding Irons • Solder and Glue Pots

▲ For more details circle NED-465 E8 on enclosed inquiry slip ▲

HEAVY-DUTY INDUSTRIAL HANDLE

RUST PROOF! SHOCK PROOF! MEETS MILITARY SPECIFICATIONS C-4150A, T-945A

Lifts 200 pounds with adequate safety factor. Special sleeve on grip will not crack, chip, become sticky or tacky in temperatures from −65° to +160°F. Patented design eliminates pinching, holds grip against surface when not in use. Attaches easily. Write for free literature and quantity discounts. Bendix-Friez, 1444 Taylor Avenue, Baltimore 4, Maryland.

Friez Instrument Division

Bendix AVIATION CORPORATION

▲ For more details circle NED-466 E8 on enclosed inquiry slip ▲

Your Room Space is CEILING HIGH when you use

Adjusto-Deck

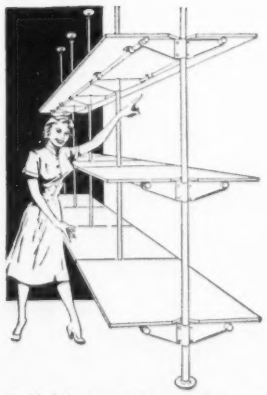
BRACKET SHELVING

•

Revolutionary New & Better

Will carry tremendous loads

•



Expands storage space upward. 2-sided bracket shelving adjusts to any depth or width, clear to ceiling. Installs without special tools. Uprights take rugged hold of ceiling & floor without bolting or threading of pipe. Costs 30% less than steel shelving. Saves on freight rates. Standard pipe & plywood may be bought locally to suit needs. Depths 26" to 96". Widths 48" to 96".

Without shelving, ADJUSTO-DECK also makes perfect Hanging Racks.

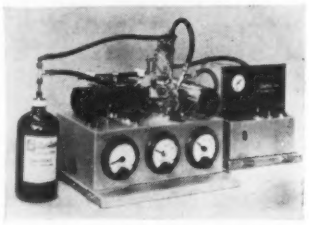
Write Today for Full Information

WALTER HAERTEL CO.

2848 FOURTH AVENUE, SOUTH
MINNEAPOLIS 8, MINN.

▲ For more details circle NED-467 E8 on enclosed inquiry slip ▲

SMALL PARTS CLEANER
solvent and hot air jets clean parts



Measured jets of fractionally - distilled solvent and micro-filtered heated air remove oils, greases, silicone lubricants, rosin flux, and other contaminants from small precision parts placed in Model 1-2BC-2S-S cleaner. Jets are delivered through two opposing banked spray heads against part mounted in bar-type fixture. Parts reciprocate in front of alternate streams of solvent and heated air during entire cleaning cycle. Spray and dry time are predetermined by operator. The neutral organic type of solvent is nonflammable, noncorrosive, nonpolar, and nonionic, and will not liberate free chlorides. It leaves no film or residue. Made by **Cobehn, Inc.**, 126 Passaic Ave., Caldwell, N. J.

▲ For more details circle NED-468 E8 on enclosed inquiry slip ▲

DIAMOND GLASS CUTTER
cuts glass in both directions

This diamond glass cutter will cut in both directions. Its natural diamond is cut on both sides, and presents a wide radius curve to the glass surface. There is always a cutting edge in contact with glass, regardless of angle or direction. Cutter has an aluminum handle. Made by **Clipper Diamond Tool Co.**, Dept. NED, 345 Hudson St., New York 14, N. Y.

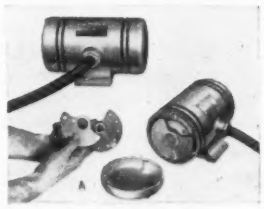
▲ For more details circle NED-469 E8 on enclosed inquiry slip ▲

TUBE PULLER & ATTACHMENTS
for replacing condenser tubes

Replacement of condenser tubes is facilitated by line of spears and adapters comprising the 3055.5 tube puller. The spear is threaded with the adapter attached into the tube. The Jenny is placed over the spear, and the horseshoe lock, into the groove back of the Jenny. Hydraulic pressure is applied to move or stretch tube 1 or 2 in. from tube sheet. A tubing punch and air gun are then used to give tube a few blows on the back end, taking up the slack with hydraulic pressure. In this way, both ends of tube are pulled loose with one setup. Made by **William S. Pine Co.**, 1636A E. 22nd St., Los Angeles 11, Calif.

▲ For more details circle NED-470 E8 on enclosed inquiry slip ▲

ELECTRIC BIN VIBRATOR



Force of vibration can be varied

Silent operation characterizes this new motor-driven adjustable eccentric vibrator in which eccentric weights are mounted at the two ends. The weights can be closed into a semi-circle for maximum force or opened into a three-quarter circle for minimum vibration. They are held together with a bolt.

Type RC-10, smallest in the line, provides six settings ranging from 140 to 550 lbs. of equivalent impact. Type RC-30 has seven settings from 385 to 1,110 lbs., and Type RC-50 provides a range of 750 to 2,250 lbs., also in seven settings. The eccentrics are protected beneath end covers after they have been set for desired action.

THE CLEVELAND VIBRATOR CO.

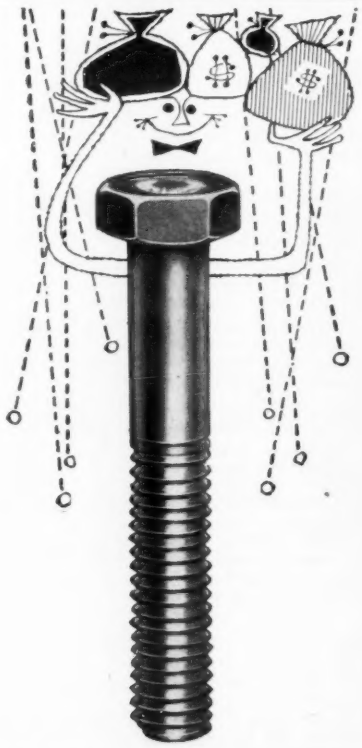
K5-2744 Clinton Avenue - Cleveland 10, Ohio

▲ For more details circle NED-471 E8 on enclosed inquiry slip ▲

ANY TUBE BENDING JOB can be done better and faster on a LEONARD BENDMASTER tube bending machine. Tell us YOUR requirements!

LEONARD PRECISION PRODUCTS CO.
9200 BOLSA AVE.
SANTA ANA, CALIFORNIA

▲ For more details circle NED-472 E8 on enclosed inquiry slip ▲



YOU'LL BE DOLLARS AHEAD WITH ALCOA ALUMINUM FASTENERS

You save dollars when you use Alcoa® Aluminum Fasteners . . . the lowest cost, corrosion-resistant fasteners available. They are a perfect color match for the aluminum products you make, and they insure against both galvanic and atmospheric corrosion. For your requirements, call your nearest Alcoa sales office. Alcoa Aluminum Fasteners . . . in all standard types and sizes . . . are readily available from the complete stocks of your local Alcoa distributor. Look in the Yellow Pages of your telephone directory. Alcoa is a "natural" for specials, too!

ALCOA ALUMINUM FASTENERS

ALCOA THEATRE
Exciting Adventure
Alternate
Monday Evenings.

Your Guide to the Best in Aluminum Value

FREE . . FACTS, SAMPLES . . FREE . . FACTS

Aluminum Company of America
2245-E Alcoa Bldg., Pittsburgh 19, Pa.
Gentlemen: Please send complete specification data and samples of Alcoa Aluminum Fasteners.

Name_____
Title_____
Company_____
Address_____

▲ For more details circle NED-473 E8 on enclosed inquiry slip ▲

Penberthy LIQUID LEVEL GAGES

for temperatures to 750°F ...pressures to 10,000 psi

Here's the complete line of accurate, easy-to-read liquid level gage sets (transparent and reflex) for all power, petroleum, and process industries. Line includes heating and cooling gages, frost-free, and welding pad gages, plus special accessories including instrument valves and non-glare lighting fixtures.

Exclusive features . . . experience-proved design . . . engineered construction make Penberthy gages durable and accurate. Order standard, or custom-made in carbon, stainless, and chrome-moly steels . . . monel, bronze or nickel.

PENBERTHY MANUFACTURING COMPANY
Division of Buffalo-Eclipse Corp.
1242 Holden Avenue, Detroit 2, Michigan

CATALOG 36 shows complete line of gages, valves, and accessories . . . free on request to Dep't. D.

Everywhere you're seeing more PRODUCTS BY PENBERTHY

- Ejectors
- Injectors
- Cycling pumps
- Electric sump pumps
- Liquid level gages
- Gage valves

▲ For more details circle NED-474 E8 on enclosed inquiry slip ▲

New! CHAIN OILERS

For automatically applying a film of oil to . . . . . .
CHAINS, GEARS, SLIDES, FLAT OR IRREGULAR SURFACES, ETC.

- ***REDUCE**—Link wear, stretch, rust and corrosion, friction, power losses, accidents and fire hazards.*
- ***ELIMINATE**—Unnecessary repairs and replacements, shutdowns, lost production, waste of oil and expensive hand oiling methods.*

TRICO Chain Oilers and Oil Applicators are designed for installation at any convenient location. Oil is released by gravity from the oil reservoir either manually or electrically. The amount of oil required is metered by precision needle valves which require no further attention after the initial setting. Various manifolds are also available which can be connected in series so that only one dispenser is needed for as many as twelve outlets.

THE APPLICATORS ARE NOT ORDINARY BRISTLE BRUSHES

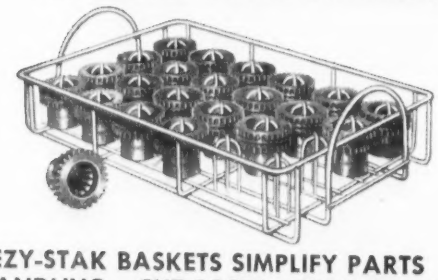
Do not overhang chain—no "side" dripping . . . do not spread or become distorted . . . Need not be rotated to compensate for wear . . . Can be shaped to any angle or contour.

SEND FOR FREE BULLETIN NO. 39

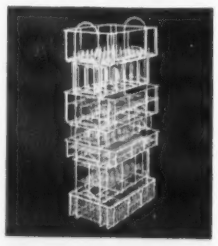
TRICO FUSE MFG. CO. Milwaukee, Wis.

▲ For more details circle NED-475 E8 on enclosed inquiry slip ▲

EEZY-STAK BASKETS for Better Parts Handling



EEZY-STAK BASKETS SIMPLIFY PARTS HANDLING...CUT COSTS...REDUCE REJECTS!



WIPCO manufactures a complete line of Custom-Designed stacking (Eezy-Stak) and non-stacking baskets for handling all types of parts through every production and assembly process. WIPCO baskets can be made in any desired size or shape, and from any practical material.

Eezy-Stak baskets feature the exclusive Interlock Handle* which permits easy and safe stacking. Eezy-Staks are available in a wide range of standard sizes and metals which fit most parts-handling requirements.

Write for Bulletin B-54

WIPCO BASKETS... *FROM INITIAL MACHINING TO FINAL ASSEMBLY AND SHIPPING*

WIRE AND IRON PRODUCTS INC.
1727 SIXTEENTH ST. • DETROIT 16, MICHIGAN

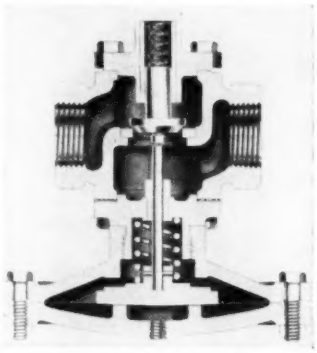
▲ For more details circle NED-476 E8 on enclosed inquiry slip ▲

AGITATOR SELECTOR
solves liquid batch mixing problems

Pocket - size Capaci-Dial selector automatically shows the correct Pneumix agitator for each liquid batch mixing problem. By turning the pointer to the size of the batch to be mixed, then looking in the window opposite the fluid's consistency and amount of agitation desired, the proper unit is indicated. Back of selector describes Pneumix explosionproof, air-motored agitators, available in 11 models for mixing from 5 to 2400 gal. Selector is offered free of charge by **Eclipse Air Brush Co.**, 421 Park Ave., Newark 7, N. J.

▲ For more details circle NED-477 E8 on enclosed inquiry slip ▲

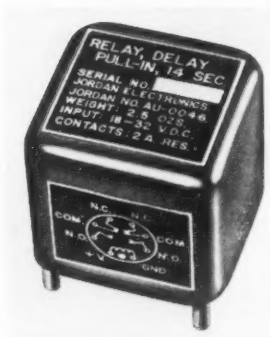
DIAPHRAGM VALVE
coupled to solenoid pilot valve



Automatic or remote flow control for high pressure applications is provided by this diaphragm valve, coupled to a Johnson direct - operated solenoid valve which serves as a pilot. Valve seat is separate from the push rod and is free to float to a tight seat. Main valve has a cast iron body, phosphor bronze diaphragm, and stainless steel disc, seat, and pushrod. It is suited for up to 250-psi service, and is offered in 2, 2½, and 3-in. sizes with screwed connections. Use can be with steam, air, water, and other liquids up to 400° F. Made by **Johnson Corp.**, 812 Wood St., Three Rivers, Mich.

▲ For more details circle NED-478 E8 on enclosed inquiry slip ▲

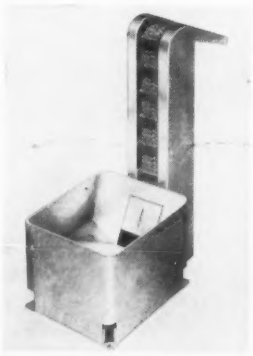
TIME DELAY RELAYS
in delay intervals to several hours



Transistorized circuitry with RC network in these time delay relays makes possible delay intervals from 50 milliseconds to several hours. Line includes delayed pull-in, delayed drop-out, and pulse types, all with nominal accuracy of ±10 per cent. Voltage ranges are 14 to 32 v dc or 24 to 220 v ac. Temperature ranges from −55 to 71° C, or −55 to 125° C are available, as well as various types of mountings and connections. Applications include warning systems, safety devices, and triggering mechanisms. Made by **Victoreen Instrument Co.**, Jordan Electronics Div., Westminster & Mission Streets, Alhambra, Calif.

▲ For more details circle NED-479 E8 on enclosed inquiry slip ▲

ELEVATING CONVEYORS
vertical design saves floor space



Basic design of line of elevating conveyors is vertical to save floor space. Floor level loading avoids high lift hopper filling. Bin outlet door can be adjusted to control flow of parts to cleated conveyor belt. Conveyor is equipped with paddle-type relay switch arm which automatically starts and stops to deliver only the quantity of parts required in the feeder bowl. Bin is formed of 3/16-in. plate with reinforced top ring. Hopper capacity is about 5 cu ft. Made by **Automation Devices, Inc.**, VFC Div., 3200 Brandes St., Erie, Pa.

▲ For more details circle NED-480 E8 on enclosed inquiry slip ▲

For strength, efficiency, economy

UNION METAL

Union Metal material handling equipment is found throughout industry: increasing production line efficiency, keeping floor areas clear, making maximum use of every cubic foot of space. For detailed information on the wide range of available designs and sizes, write The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL
Material Handling Equipment

box

pal

ski

▲ For more details circle NED-481 E8 on

If overheating can cause trouble— BUSS HEAT-LIMITERS *may be your ansu*

▲ For more details circle NED-482 E8 on

The Authorized SKF

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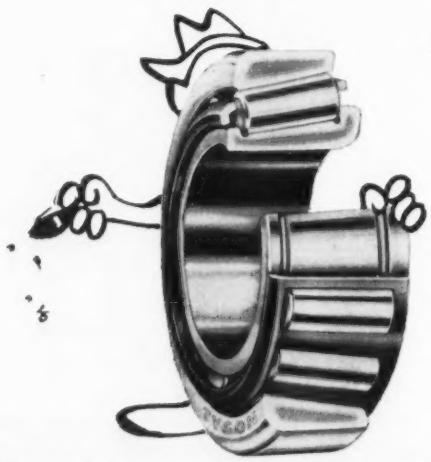
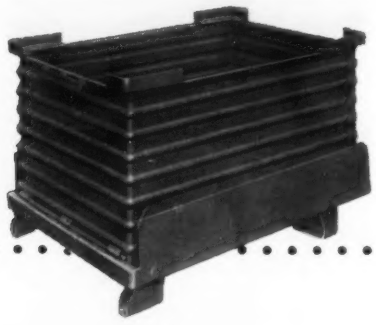
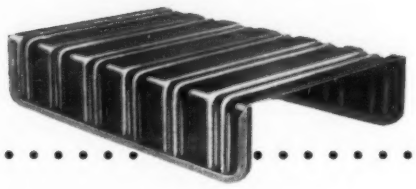


Spherical, Cylindrical, Ball, and "Tyson" Tapered Roller Bearings

▲ For more details circle NED-483 E8 o


boxes

pallets


skids

ED-481 E8 on enclosed inquiry slip ▲

se

RS

answer!

Typical applications for BUSS Heat-Limiters are: hair driers, air conditioners, hot lacquer sprays, refrigerator defrosters, ovens, cookers and other devices or apparatus where excessive heating or failure of temperature control might cause trouble or a hazard.

How BUSS Heat-Limiters operate: A BUSS Heat-limiter has a thermal cut-out that opens the circuit if anything causes the temperature to rise above its opening point.

Where thermostats are used, BUSS Heat-Limiters provide ideal back-up protection should the thermostat fail for any reason.

BUSS Heat-Limiters are available in many types and in many styles of terminals to suit requirements.

Tell us your problems and let BUSS engineers work with you to help solve it.

For more information write for bulletin PRO-1 . . . Bussmann Mfg. Division, McGraw-Edison Co., St. Louis 7, Mo.

BUSS *Safety-Valve*
HEAT LIMITERS

Another outstanding development by the makers of BUSS FUSES

ED-482 E8 on enclosed inquiry slip ▲

SKF *Bearing Distributor*

stands behind every

bearing he delivers

He backs up his complete line of SKF bearings with on-the-spot service—and specialized experience with all types of bearing selection, installation and maintenance problems. To make sure your bearings run smoothly, just call him today.

7834

Roller Bearings

EVERY TYPE—EVERY USE

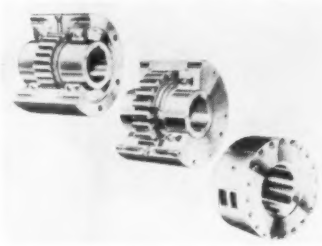
SKF®

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

®REG. U.S. PAT. OFF.

ED-483 E3 on enclosed inquiry slip ▲

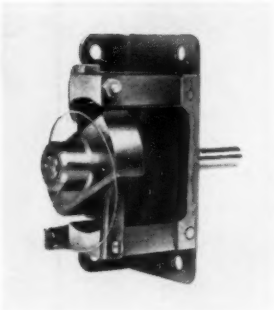
OVERRUNNING CLUTCHES
in indexing and backstop types also



Ten new models have been added to the sprag type line of ball-bearing clutches for overrunning, indexing, and backstopping applications, as well as a complete new line of sleeve-bearing large-bore backstop clutches. High speed models added have 4, 5, and 6-in. bores. Sealed models for dust-laden areas include these same bore sizes. The lightweight, 6-in. bore, ball-bearing backstop clutch has a maximum overrunning speed of 500 rpm and a 9000-lb-ft torque capacity. The large bore sleeve-bearing backstop clutches are made in 6, 7, 8, 9, 10, and 11-in. maximum bore diameters. Made by **Formsprag Co.**, 23595 Hoover Rd., Warren, Mich.

▲ For more details circle **NED-484 E8** on enclosed inquiry slip ▲

ROTARY SOLENOID
has adjustable output torque



Rotary motion from an alternating or direct current input without mechanical linkage is provided by the Motoroid rotary solenoid. Output torque and angle of rotation are easily selected and adjusted by shifting two stops that limit rotor travel. First of the 100 Series has output torque up to 4 lb-in. Closed or open-frame (illustrated) types in continuous or intermittent duty models are offered with left or right-hand rotation. Operating temperature range is −65 to 300° F. Special models range up to 500° F. Standard unit operates on 110 v, 60 cycles ac, and standard rotation angle is 60 degrees. Other alternating and direct current voltages and longer travels can be specified. Made by **LeeTronics, Inc.**, Dept. NED, 30 Main St., Brooklyn 1, N. Y.

▲ For more details circle **NED-485 E3** on enclosed inquiry slip ▲

LIGHTWEIGHT ELECTRIC HOIST
of aluminum in ½ to 2-ton capacities

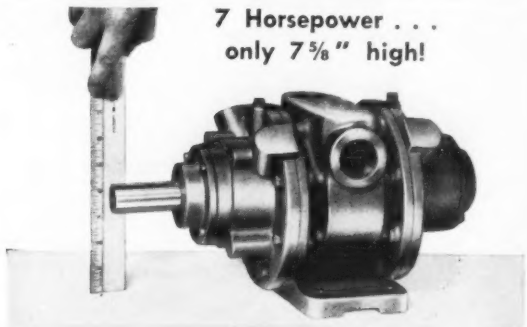
Heavy duty performance and durability are offered in line of Quik-Lift ½ to 2-ton lightweight, aluminum hoists. They have mechanically interlocking pushbutton controls with strain cable and pistol grip for pulling trolley-mounted units. One-hand operation is possible, and control circuits are safe 115 v, regardless of hoist voltage. Suspension design permits changing from hook to lug or shifting from single to double-chain lifting by merely removing three screws and replacing or moving the suspension unit. Made by **Duff-Norton Co.**, Coffing Hoist Div., 801 Walter St., Danville, Ill.

▲ For more details circle **NED-486 E8** on enclosed inquiry slip ▲

MANUAL FOUR-WAY VALVES
0 to 250-psi air and oil types

Series of 0 to 250-psi manual four-way air and oil valves with the Shear-Seal leak-proof design includes standard three-position and spring return models. Valves are available in ¼, ⅜, and ½-in. NPT sizes. Minimum flow passages range from ⅜ to 9/16-in. diameter, and rated flow at 20 fps ranges, from 7 to 15.5 gpm according to port size. Mechanical parts are made from stainless steel and aluminum. Made by **Barksdale Valves**, Control Valve Div., Dept. NED, 5125 Alcoa Ave., Los Angeles 58, Calif.

▲ For more details circle **NED-487 E8** on enclosed inquiry slip ▲



7 Horsepower . . . only 7⅝" high!

It's NEW! Variable-speed Model 16AM

GAST ROTARY AIR MOTOR

Here's compact, explosion-proof power! Only 14⅜" x 8" x 7⅝" — wt. 65 lbs. — yet up to 7 h.p. on 90 lbs. air pressure. Speed variable from 300 to 2,000 r.p.m. with simple valve control. Overloads can't burn it out — stalling does no harm.

Has foot, also tapped holes for flange mounting to your machine. Use as original equipment or in plant to drive hoists, mixers, pumps, fans, etc. Priced at $200.

Write for your copy of Bulletin 16AM.

GAST MANUFACTURING CORP., P.O. Box 117-R
Benton Harbor, Michigan

See Catalog in Sweet's Design File

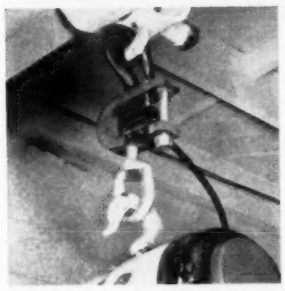
GAST ROTARY

- AIR MOTORS TO 7 H.P.
- COMPRESSORS TO 30 P.S.I.
- VACUUM PUMPS TO 22 IN.

"Air may be your answer!"

▲ For more details circle **NED-488 E8** on enclosed inquiry slip ▲

Hoist overload safety switch uses CROSBY-LAUGHLIN Hooks-Eyes



Dillon Dyna-Switches automatically stop overloaded cranes and hoists. The manufacturer specifies drop forged Crosby-Laughlin* "Load Rated"* Shank Hooks and Lifting Eyes for use in this product. The hook is welded to the "U" bar—the eye screwed in and welded.

OEM's like W. C. Dillon & Co., Van Nuys, Calif., demand safety—exceptional performance from component parts. Crosby-Laughlin "Load Rated" Fittings meet every manufacturer's specifications—they've been tested in all industries—accepted because of their high safety factor and lack of rejects. Choose from the world's most complete line of *drop forged* fittings—see the entire line fully described with dimensional specifications in new catalog now offered by industrial, construction and mill supply distributors. *Trademark

CROSBY-LAUGHLIN *Division*

AMERICAN HOIST & DERRICK COMPANY
FT. WAYNE 1, INDIANA

▲ For more details circle **NED-489 E8** on enclosed inquiry slip ▲

IT'S ALL NEW AND READY FOR YOU

it's your NEW HANDY HELPER Shipping Room Supply Catalog

THIS HANDSOME "NEW" EDITION IS YOUR MODERN GUIDE TO BETTER SHIPPING METHODS AND SHIPPING ROOM SUPPLIES, INCLUDING THE ORIGINAL "ROL-IT-ON" ROLLER STENCIL PROCESS.

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P. O. BOX 269 HERRIN, ILLINOIS

Please Send Me a FREE COPY of "Your Handy Helper"

Name ..... Title .....
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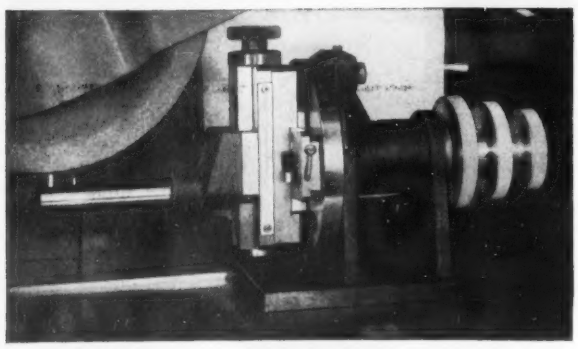

NOW . . . DRESS ANY WHEEL FORM

in half the time with the direct reading

TANGI-MATIC DRESSER

- completely self-contained
- dresses any combination of tangents and/or radii
- no special skill required to do precision dressing
- greater accuracy thru bottom dressing method

See your Threadwell Distributor or write for free bulletin T-244

Threadwell — THREADWELL TAP & DIE CO. Greenfield, Mass.

▲ For more details circle NED-491 E8 on enclosed inquiry slip ▲

FOR SAFETY'S SAKE *and better work, too . . .*

x-acto® surgically-sharp interchangeable blade KNIVES

for all cutting, slicing, trimming, slitting jobs!

x-acto INDUSTRIAL CUTTING TOOLS

Cutting efficiency and safety with a blade shaped to suit your needs. Try-out order! $1.00 for knife handle and sample blade assortment. Catalog of complete knife and blade line on request.

If you have any special requirements for cutting tools, call on us at once. Our half-century of specialized experience is at your disposal.

Handicraft Tools, INC., A division of X-acto, Inc. 48-416 Van Dam Street Long Island City 1, N. Y.

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SPRAY PAINTING MASKS — A competent engineering staff will counsel with you on the most efficient technique for handling your particular requirements.

CLAMPS AND FIXTURES — Positive pressure and exact registration of the part in the mask. Reduce rejects. Free both hands for productive movements.

PRODUCT DEVELOPMENTS BY CM CONFORMING MATRIX

AUTOMATIC MACHINES — Increase production hundreds to one over hand methods. Reduce labor costs. Eliminate need of experienced workmen.

MASK WASHING MACHINES — 50% faster than any other make. Cut solvent consumption. Avert production delays due to damaging of masks by hand scrubbing.

CUT FINISHING COSTS THROUGH INCREASED PRODUCTION

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CONFORMING MATRIX CORPORATION

338 Toledo Factories Building. Toledo 2, Ohio

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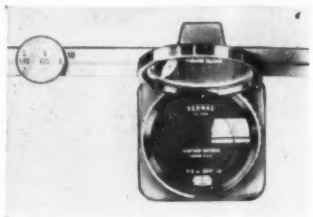
MACHINE TOOL VERNIER measures table position to 0.0001 in.



Vernac direct - reading optical vernier can be incorporated on new and existing machine tools for measuring longitudinal, lateral, or vertical table position within 0.0001 in. Scale readings are projected through a 22-power lens onto an illuminated, direct-reading dial. Readings are in 0.025-in. intervals and can be refined to 0.0001 in. by fine adjustment with a double spiral reticle. Once a reference point is established on the dial during tool set up, the set-up and control of subsequent machining operations is a matter of adding and subtracting from this point. Movement caused by table locking mechanisms and table movement errors are indicated. Made by **Simpson Optical Mfg. Co.**, 3202 W. Carroll Ave., Chicago 24, Ill.

▲ For more details circle NED-494 E8 on enclosed inquiry slip ▲

BLISTER PACKAGE protects and displays products

Miscellaneous hardware, fasteners, and electrical and electronic components are among products that can be packed in the Kleervue Pak, a blister-type package. Plastic blisters in a wide variety of shapes and sizes hold the product and extend through a die-cut opening of a custom, multi-color printed, gummed card. Two types of adhesives are available on the cards. A heat-seal or a thermo-adhesive backing that will not stick until heat is preapplied to the stock. Purchaser receives a finished card ready for blister, product, and sealing. Second adhesive type is a dry latex board which sticks only to itself without equipment. Mechanical pressure can be applied for a strong bond. Made by **Dancyger Mfg. Co.**, 4707 Detroit Ave., Cleveland 2, Ohio.

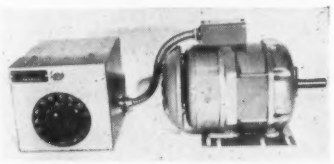
▲ For more details circle NED-495 E8 on enclosed inquiry slip ▲

CHAIRS & STOOLS each has 8-in. height adjustment

Height of adjustable shop and office chairs and stools is adjusted by lifting the seat to the desired height. Downward adjustment is by lifting to the maximum height to release an automatic lock, then raising from the bottom position. Each has an adjustment of 8 in. Height of the different models ranges from 14 to 32 in. Stools are offered with round steel or round wood seats, wood or steel backs, and casters. Chairs have molded plywood seat, steel or plywood backs, casters, and foot ring. They are of tubular steel construction. Made by **Garrett Tubular Products, Inc.**, Dept. AD, Box 237, Garrett, Ind.

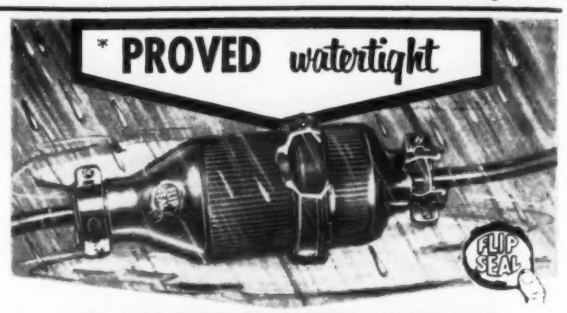
▲ For more details circle NED-496 E8 on enclosed inquiry slip ▲

MOTOR SPEED CONTROL for fractional to 20-hp dc motors



The MRS (motor rectifier single) electric motor speed control operates by varying the voltage before rectification, and transmitting only the actual power required. The variable speed drive utilizes direct current motors and operates them from 115 or 230-v ac power supplies. Silicon type rectifiers are used. Smooth, continuous speed control is obtained by turning a dial. The control unit can be mounted in any position at any desired distance from the motor. Control can be furnished for any duty from fractional to 20 hp using specified direct current motors. Dynamic braking and motor reversing are optional extras. Made by **Carpco Mfg., Inc.**, Dept. NED, Box 3272, Jacksonville 6, Fla.

▲ For more details circle NED-497 E8 on enclosed inquiry slip ▲



THE FLIP-OVER ELECTRICAL CONNECTOR WITH THE WATERPROOF SEAL

*Canadian Standards Association Laboratories' tests report the following: "Representative samples (of Flip Seal) were assembled to lengths of flexible cord of the proper diameter and were immersed in 2 feet of water for 24 hours. There was no infiltration of water."

WATERPROOF—flexible lip overlapping male cap and seals at wire entrances effectively stop moisture penetration

CRUSHPROOF — lip and heavy construction protect against crushing, shock, abuse.

DUSTPROOF—just as effective against entrance of dust, dirt or metal particles

AVAILABLE — in rubber or neoprene in a variety of blade arrangements

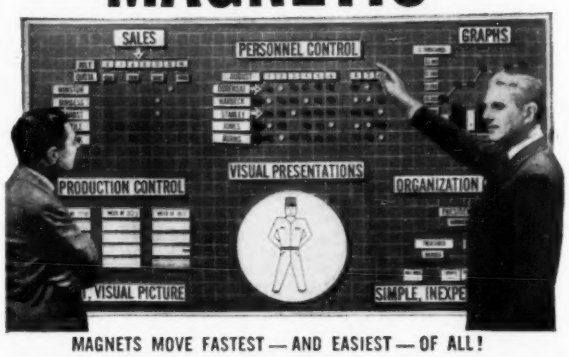
UL Listed - CSA Approved

For complete information and prices, write:

Rodale Mfg. Co., Inc. D5 Emmaus, Pa.

▲ For more details circle NED-498 E8 on enclosed inquiry slip ▲

VISUAL **MAGNETIC** CONTROL



MAGNETS MOVE FASTEST — AND EASIEST — OF ALL!

SIMPLEST VISUAL SYSTEM FOR
- Production
- Personnel
- Sales
- Maintenance
- Scheduling
- Machine Loading
- Charts—Graphs
- Visual Presentations

COLORFUL MAGNETIC ELEMENTS
- show facts instantly
- organize for action
- eliminate mistakes
- get the job done

PRICED FROM $38 INCLUDING MAGNETIC ELEMENTS

PRICE LIST & BROCHURE NES FREE ON REQUEST

REPRESENTATION DESIRED IN SOME AREAS

Methods Research Corp.

442 Mosel Avenue, Staten Island 4, New York

▲ For more details circle NED-499 E8 on enclosed inquiry slip ▲

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$1600*

will put this Power Press Brake to work in your shop in a matter of days...

IMMEDIATE DELIVERY FROM STOCK

STANDARD DIES
48" long, 90° "V" dies for handling 16 ga. stock in the 16-48 are priced at $102.

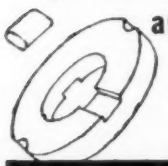
If you're trying to "get by" without a power press brake . . . or if you're tying up big brakes on small jobs . . . here's the answer to your problem — a rugged Verson Model 16-48 press brake. You can get one right "off the shelf" for only $1600*. You get the famous Verson all steel construction plus proved-in-service Verson design. Capacity is 16 ga. x 48" of mild steel. Write for complete specifications and then place your order. That's all there is to it . . . no involved proposals . . . no delays.

*Prices F.O.B. Chicago, less dies; subject to change without notice.

ORIGINATORS AND PIONEERS OF ALLSTEEL STAMPING PRESS CONSTRUCTION
-Verson- **VERSON ALLSTEEL PRESS CO.**
9329 S. Kenwood Avenue, Chicago 19, Illinois
8300 S. Central Expressway, Dallas, Texas

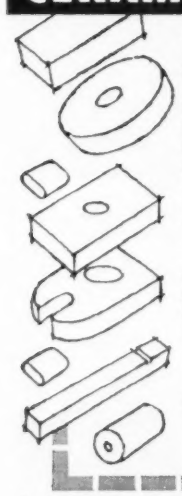
▲ For more details circle **NED-501 E8** on enclosed inquiry slip ▲

You can do more things . . . and do them better with



STACKPOLE CeraMAGNET®

CERAMIC MAGNETS



The permanent magnets that are really permanent

Ceramics offer greatest resistance to demagnetization of any commercial magnet material . . . All energy is fully usable—no keepers, pole pieces or auxiliary air gaps needed . . . Can be magnetized before or after assembly . . . Electrically non-conductive . . . Less heating . . . Inert to chemicals and gases . . . Up to 8 or more poles on a single flat face . . . AND MANY OTHER ADVANTAGES.

Write for Ceramagnet Engineering Bulletin RC-11A

STACKPOLE CARBON COMPANY
St. Marys, Pa.

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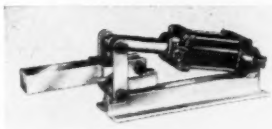
LIQUID OXYGEN NEEDLE VALVE operates at up to 10,000 psi

Forged from Type 316 stainless steel for a size range from 1/8 to 1 in., Model 808 needle valve handles liquid oxygen at temperatures of −300° F and at pressures up to 10,000 psi. With the resilient Teflon or Kel-F packing, valve has burst pressure in excess of 30,000 psi. Stem threads are plated with molybdenum disulphide dry film lubricant to reduce operating friction. With valve stem in closed position, it affords positive shutoff with valve bonnet entirely removed from valve body. Applications include propellent tank pressurization systems, fuel tank purging systems, portable liquid oxygen fueling carts, and ground check-out equipment. Made by **Dragon Engineering**, Dept. DE-1, 5815 S. Central Ave., Los Angeles, Calif.

▲ For more details circle **NED-504 E8** on enclosed inquiry slip ▲

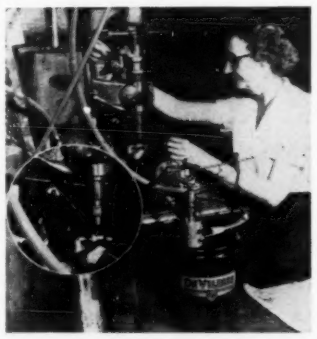
AIR-OPERATED CLAMPS rated 800-lb holding force



The Knu-Vise series of air cylinder - powdered holding clamps has been augmented with addition of this heavy duty clamp in the 800-lb classification. Three models include one for conventional holding and one for mounting situations where cylinder would interfere with conventional clamping. Made by **Lapeer Mfg. Co.**, 3062 Davison Rd., Lapeer, Mich.

▲ For more details circle **NED-505 E8** on enclosed inquiry slip ▲

COOLANT SPRAY EQUIPMENT attaches to lathes, mills, saws



A fine mist of coolant or light cutting oil is supplied to the point of a cutting tool by Multi - Mister spray equipment. It can be quickly attached to lathes, mills, screw machines, drill presses, power saws, grinders, jig borers, broaches, and machines not designed to work wet. Equipment operates from main air line without regulators. It consists of one or more adjustable tip spray nozzles and mounting brackets, flexible tubing to carry air and coolant, and supply tank equipped with suction tube, strainer, and header. Each nozzle line has separate adjustment for air pressure and amount of fluid delivered. Made by **DeVilbiss Co.**, 301 Phillips Ave., Toledo 1, Ohio.

▲ For more details circle **NED-506 E8** on enclosed inquiry slip ▲

Only WING REVOLVING UNIT HEATERS Give You All These Advantages:

- *No hot blasts, no cold spots*
- *Slow, gentle air movement — no disturbing drafts*
- *Constantly changing air direction gets around obstacles — delivers even heat*
- *Fewer WING heaters required — cover larger areas than stationary heaters*
- *Lower installation and maintenance costs*
- *High ceiling installations — up to 60 feet*
- *Low ceiling mountings — as low as 8 feet*
- *Low outlet temperature regardless of steam pressure*

MORE INFORMATION? WRITE FOR BULLETIN HR-6A

L. J. Wing Mfg. Co.
DIVISION OF AERO SUPPLY MFG. CO. INC.
165 VREELAND MILLS ROAD, LINDEN, NEW JERSEY
WC-112

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WORLD'S NO.1 INDUSTRIAL MARKER!
King Size
FLO-MASTER
Felt Tip Pen

Marks BIG & BOLD on any surface!

Especially designed for heavy duty use at your Shipping Room Table—Factory Bench.

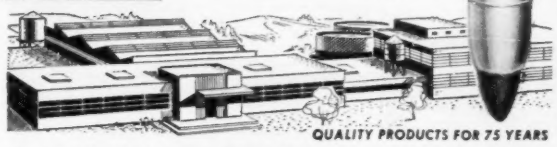
King Size Flo-master has a greater ink capacity, uses larger felt tips (up to 1" wide) than any other marking instrument. For use with: • Transparent marking inks, *all colors* • Paint-like, opaque pigments, *all colors* • Most industrial solvents

Dual-purpose, snap-on cap may be screwed to table or work bench as a convenient, permanently-secured receptacle. Installed as shown, receptacle is airtight, keeps felt tip always moist, clean and free from factory dust and dirt, always ready for instant-marking on metal, glass, wood, plastics, rubber, fabrics.

By the makers of the *pocket-size* Flo-master Felt Tip Pen—"The Standard of all Industry."

At your marking equipment supplier —or write to

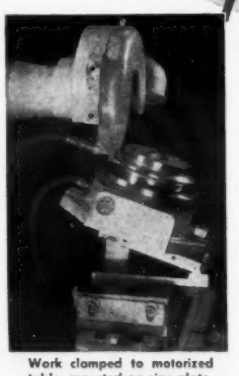
Dept. NE-5
CUSHMAN & DENISON
Carlstadt, New Jersey



QUALITY PRODUCTS FOR 75 YEARS

▲ For more details circle **NED-507 E8** on enclosed inquiry slip ▲

With Lapping Plate



Work clamped to motorized table, mounted on sine plate. Surface grinder application.

FASTER
circular precision grinding!

Now with this table and with less effort you assure highest standards of accuracy, flatness, finish and close tolerances. At the same time you eliminate slow and complicated tool setups. You cut grinding time greatly by using only cross feed while the table is rotating at infinite speeds between 40 and 100 RPM.

For example, Vulcan's Rotary Table can be used in connection with a sine plate or angle fixture. The dressing of large expensive external wheels for side grinding is therefore eliminated. If you wish we can provide permanent magnetic chucks designed for use with our table, both 6" and 10" in diameter.

Vulcan's Rotary Table is an air operated, self contained unit, portable between bench or machine. A precision center hole for locating and tapped holes in the table for clamping provides easy setup. Circular surface grinder applications are many and varied — grind flanged studs or bushings — bearing spacers — forming rolls — cutters — convex or concave surfaces — punches or dies (radius or angle).

Lapping? Yes — and in micro inches. For the 6" and 10" table, lapping plates of 12" and 16" are provided. Perfect for lapping valve plates, gages, bearing spacers and for carbide lapping using diamond powder. *Write for circular.*

SERVICES OF YOUR TOOL ROOM IN DAYTON
ENGINEERING • PROCESSING • BUILDING • TOOLS
DIES • SPECIAL MACHINES • VULCANAIRE JIG GRINDERS • MOTORIZED ROTARY TABLES • BREHM "SHIMMY" AND RELATED DIES • AUTOMATION

Write on your letterhead to
VULCAN TOOL COMPANY
739 Lorain Ave., Dayton 10, Ohio
VULCAN tools

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SAVINGS CONSCIOUS?

Listen To This . . .

The part illustrated (approx. ½ actual size), complicated though it may seem, cost one manufacturer only $174.00 for the first 1000 pieces and just $76.00 for each 1000 following. These charges included all blanking, forming and drawing; tools and material.

It was part of an elaborate piece of machinery designed by a manufacturer who had presumed after investigating conventional stamping methods that it would be impractical for him to enter production. However, after he presented his blueprints to WLS engineers, he discovered a price saving that enabled him to go forward with his plans. As a result, he has returned to WLS many times for similar problems.

COMPLETE FACILITIES
- Blanking
- Forming
- Piercing
- Drawing
- Extruding
- Stenciling
- Tapping
- Countersinking
- Plating
- Machining
- Painting
- Grinding
- Welding

This illustration of an actual part produced by SPEEDTOOLING for one of our customers represented a savings of 78% over previous production methods.

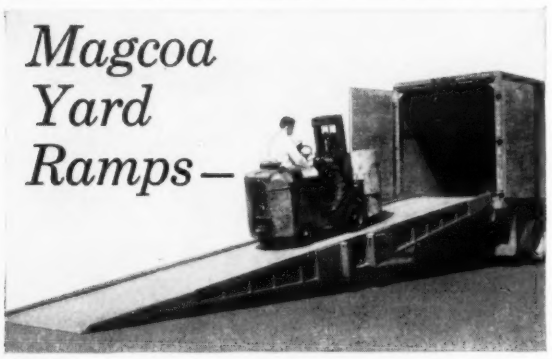
FREE

FOR THOSE MANUFACTURERS WHO ARE FACED WITH MANUFACTURING PROBLEMS WE OFFER A FREE BULLETIN ILLUSTRATING MANY STAMPINGS WE HAVE PRODUCED FOR MANUFACTURERS AS WELL AS A SAMPLE AND COST SUMMARY OF AN ACTUAL PART WE ALSO OFFER FREE QUOTATIONS FROM YOUR BLUEPRINTS AT ANY TIME.

WLS STAMPING COMPANY
3287 E. 80th Street • Cleveland 4, Ohio

For more details circle NED-509 E8 on enclosed inquiry slip

Magcoa Yard Ramps—



Portable, easy to handle . . .

like owning an extra dock!

A Magcoa portable Yard Ramp enables you to load and unload when you choose . . . where you choose. It's a loading dock on wheels. For details, write direct, or circle reader service card.

magcoa TRADE MARK

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 6, IND.

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NAMES IN THE NEWS!

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Missile Development Centers are among the largest Government Defense users of Produc-Trol for research, production, manpower and other types of scheduling.

PRODUC-TROL Visual Control *not only schedules,* But automatically checks with TIME, LINE and COLOR control

- Original cost and upkeep low.
- Schedules and time checks operations.
- Historical record to back it up.
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- Its simplicity has put it into world-wide use.
- Analyze 100 items in 10 seconds.

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WASSELL ORGANIZATION, INC.
Westport, Conn.

Please send Free Booklet on Produc-Trol. NED
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ADDRESS .....
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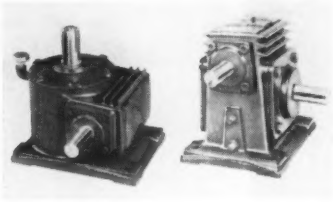
For more details circle NED-511 E8 on enclosed inquiry slip

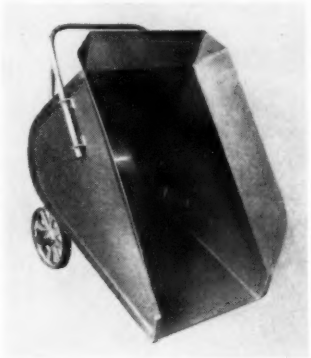
WORM GEAR REDUCERS
have 2 to 3 3/8-in. center distances



Worm gear speed reducers added to Hygrade line are the Type S, worm at bottom; Type T, worm at top; Type L, low base vertical output shaft up; and Type H, high base vertical output shaft down. Ranging from 1/3 to 5 hp, units are available in 2, 2 3/8, 2 7/8, and 3 3/8-in. center distances. Each size is offered in ratios of 10 1/3:1, 20 1/2:1, 30:1, 40:1, 50:1, and 60:1. Features include use of radial and thrust ball bearings, tapered roller bearings, and an improved neoprene spring-backed lip seal to insure oil-tight shaft sealing. Made by **Foote Bros. Gear & Machine Corp.**, Dept. N, 4545 S. Western Blvd., Chicago 9, Ill.

For more details circle NED-512 E8 on enclosed inquiry slip

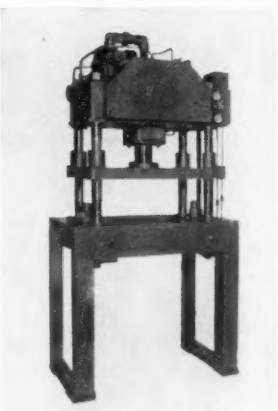
CHIP BUGGY
made of aluminum, weighs 140 lb



Now made of aluminum, this chip buggy weighs only 140 lb instead of the 375 lb for the steel model formerly produced. It is used to haul cuttings and chips from automatic cutting machines of various types. Timken roller bearings in the cast aluminum wheels make the buggy easy to push, even when loaded. Made by **E. W. Bliss Co.**, Rolling Mill Div., 1374 Raff Rd. S.W., Canton 10, Ohio.

For more details circle NED-513 E8 on enclosed inquiry slip

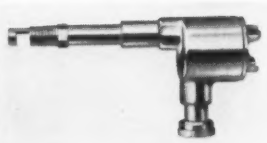
AIR-HYDRAULIC TRIM PRESS
25-ton model has 0 to 12-in. stroke



Compact and easily moved with a lift truck, this air-hydraulic trim press is suited for trimming die castings and similar work. Ram advances at 1300 ipm, and return speed is 550 ipm. This 25-ton press has a stroke which is adjustable from 0 to 12 in. Lower platen area measures 31 x 40 in.; shut height is 6 1/4 to 18 1/4 in.; and distance inside tie bars is 17 by 33 in. Power stroke cuts in just prior to entering the trim without dwell. Made by **B & T Machinery Co.**, 225 May St., Holland, Mich.

For more details circle NED-514 E8 on enclosed inquiry slip

NUCLEAR LEVEL SENSOR
operation based on beta ray absorptive feature of liquids



Beta radiation materials used in sensing element of this Betatrol liquid level sensor assure extreme accuracy in water, acids, alkalies, oils, and viscous liquids. Mounted in probe is a sealed beta radiation source and a beta ray detector tube, separated by space open to liquid. Beta particles pass with minimum of absorption to detector tube where pulse train is produced and transmitted to thyratron tube in remotely located amplifier. When probe position is encountered by liquid, beta radiation is absorbed by material, reducing pulse rate at detector.

Relay in amplifier will operate warning devices, motor starters, valves, or timers. Sensor operates on 105-125 v ac. Probe operates in −65 to 220° F range and at pressures from vacuum to 800 psi. Amplifier has 0 to 135° F range. Accuracy is ±0.05 or 0.10 in., depending upon mounting position. General purpose, hazardous-location, weather-resistant, and other safety enclosures are offered. Made by **Robertshaw-Fulton Controls Co.**, Aeronautical & Instrument Div., Dept. N-1, 401 N. Manchester, Anaheim, Calif.

For more details circle NED-515 E8 on enclosed inquiry slip

WEDGE-GRIP for heavy production work. Knurled, wedge-shaped handle.

ROUND-SHANK'S full, round, knurled handle prevents slipping.

a TYPE HOLDER for your job

CURVED-LINE is for stamping ends of small bars, shafts and other rounds.

Made from a special grade of tool steel, they do not spall or mushroom—providing longer and safer service. All have simplified type change features. *Write for Bulletin.*

SLEEVE assures clear impressions on small tubing, pipe, bars and flat stock.

A product of the Marking Device Industry

Mecco SAFETY MARKING TOOLS M.E.CUNNINGHAM CO.
1055 CHATEAU STREET, PITTSBURGH 33, PA.

For more details circle NED-516 E8 on enclosed inquiry slip

SUPER LOW-COST CUTTING

CUT PIPES AND TUBES

FAST

THE SUPER-SPEED ROTARY WAY

CONTINENTAL ROTARY CUT-OFF MACHINES
fast—cut lengths in just seconds
economical—up to 100,000 cuts per cut-off wheel
saving—no waste loss of your material
Air or manual, 3/8" to 12 3/4" O.D. Request catalog.

SINCE 1919
Continental machine co.
2345 W. NELSON ST. • CHICAGO 18, ILL.

For more details circle NED-517 E8 on enclosed inquiry slip

Always the Wisest Choice Now a Wider Choice...

OVER 4000 TYPES OF DARNELL CASTERS AND WHEELS

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

Get this FREE

See your industrial supply jobber . . .

Look in the YELLOW PAGES

Specify Darnell for Complete Satisfaction

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DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

For more details circle NED-518 E8 on enclosed inquiry slip

Get These Catalogs on

WATER PURIFICATION

They Can Lead to

SUBSTANTIAL SAVINGS

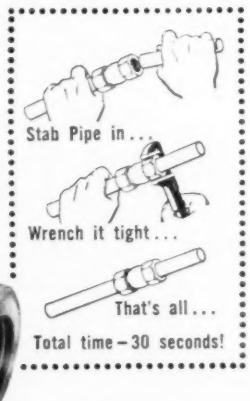
In Your Plant or Laboratory

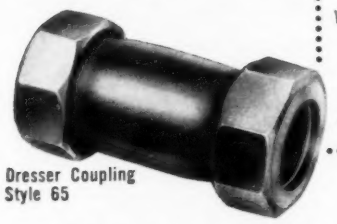
CATALOG "G"	Describes BARNSTEAD WATER STILLS in capacities up to 1000 gallons per hour.
CATALOG 127	Shows the Barnstead line of Water Demineralizers in capacities up to 2500 gph.
BULLETIN 141	Newest development in Pure Water Filtration . . . . Barnstead MF SUBMICRON Filter which filters out particles to 0.45 micron.
BULLETIN 139	Presents Barnstead's complete line of tin-lined Piping and Fittings to keep distilled water pure to point of use.
BULLETIN 140	Lists Barnstead's line of Water Demineralizers for Laboratory use.
BULLETIN 128	Describes the Barnstead Pressure Bantam Water Demineralizer. Employs replaceable cartridge.

Barnstead STILL & STERILIZER CO.
16 Lanesville Terrace, Boston 16, Mass.
FIRST IN PURE WATER SINCE 1878

For more details circle NED-519 E8 on enclosed inquiry slip

30 seconds to solve tough piping problems





Dresser Coupling Style 65

Name your piping problem: misalignment, vibration stresses, cramped working quarters, or costs of future maintenance and takedown. Dresser Style 65 Couplings solve them *all*. Installed with a simple hand wrench, it takes you 30 seconds to make a permanent, tight joint! Water, oil or gas lines in diameters up to 2-inches . . . plain end pipe (no threading problems). The non-rigid Dresser® Coupling compensates for pipe misalignment, absorbs stresses and vibrations. Booklet No. 531 further shows many typical cases where Dresser Couplings solved tough piping problems.

Dresser Manufacturing Division, Bradford, Pennsylvania

DRESSER MANUFACTURING DIVISION

For more details circle NED-520 E8 on enclosed inquiry slip

Flanged precision bearing cuts production cost

Barden Precision SFR1-5K .0937 bore, .3125 O.D.

The SFR1-5 is a standard *Barden Precision* miniature bearing for low torque applications using through-bored housings.

It is particularly suited for such devices as precision gear trains and gearhead motors that also require low eccentricity and closely controlled radial play.

Its precision flange provides accurate positioning and alignment . . . eliminates the need for housing shoulders . . . reduces complexity and cost of component manufacture.

Built to the same dimensional and functional standards as the larger Barden instrument sizes, this *precision* miniature bearing has accuracy and uniformity to meet the most critical requirements, plus performance to match the needs of the application.

The SFR1-5, like the others in the full range of *Barden Precision* miniature and instrument sizes, is designed and produced to improve the performance of the mechanism in which it is fitted.

THE BARDEN CORPORATION
67 East Franklin Street, Danbury, Connecticut
Western office: 3850 Wilshire Boulevard, Los Angeles 5, Calif.

Write for catalog, engineering data or application assistance.

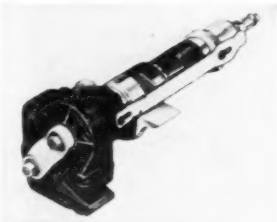
For more details circle NED-521 E8 on enclosed inquiry slip

WAVINESS METER
for up to 18-in. diameter surfaces

Designed to measure the waviness on symmetrical surfaces of rotation, this Vertical Wavometer will handle inside and outside diameters of up to 18 in. It gives a meter reading of the rms average height of the waves in two wavebands, directly in microinches. An oscilloscope shows the general shape and spacing of the waves in either waveband. Surface irregularities are transformed into sound, and deviations from normal are signalled audibly. Made by **Micrometrical Mfg. Co.**, Dept. 9, 345 S. Main St., Ann Arbor, Mich.

For more details circle NED-522 E8 on enclosed inquiry slip

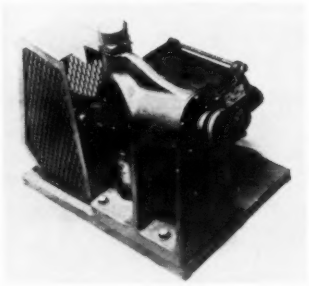
PNEUMATIC STRAP STRETCHER
tightens, cuts 3/8 to 3/4-in. strap



Particularly suited for use on narrow, irregular, or round incompressible packages, Model PNEK air-powered stretcher tensions and breaks off steel strapping after the sealing operation is completed. This 4-lb tool accommodates 3/8, 1/2, 5/8, and 3/4-in. straps in standard gages. Duckbill breaks strap flush with seal. Made by **Sharon Steel Corp.**, Brainard Steel Div., 3100 Griswold St., Warren, Ohio.

For more details circle NED-523 E8 on enclosed inquiry slip

ELECTRIC DRIVE INJECTOR
meters hot or cold viscous compounds



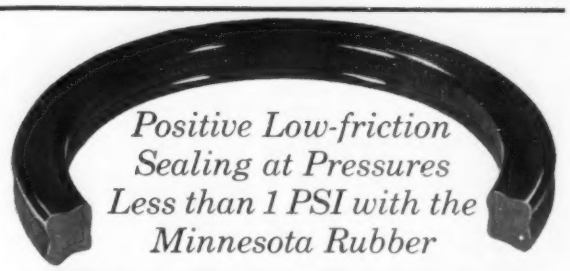
Series 7000 variable volume electric drive injector is a micro-controlled positive displacement pump which meters quantities of hot or cold compounds of various viscosities. Plunger stroke, adjustable from 0 to 1 1/4 in., can be changed and locked with injector in operation. Unit is powered by 1/4-hp, 1750-rpm, explosiveproof or fully enclosed electric motor geared down to nonfluctuating 48 rpm. With a 1/2-in. plunger, injector will deliver from 0.5 gph at 7000 psi to 2.5 gph at 1200 psi. With a 1-in. plunger, it delivers from 4.4 gph at 750 psi to 12.75 gph at atmospheric pressure. Made by **Texsteam Corp.**, Dept. NED, Box 9127, Houston 11, Tex.

For more details circle NED-524 E8 on enclosed inquiry slip

HIGH SPEED TURRET LATHE
has 13-in. swing over bed ways

Spindle speeds from 40 to 2000 rpm are selected automatically by fast-slow pushbutton controls on the Model SWM - 46P high speed turret lathe. Designed for secondary operations and production jobs, it has a 13-in. swing over the bed ways and a 1/16-in. collet capacity. Spindle speeds are indicated on a built-in tachometer in the headstock. A six-station ram turret accommodates up to 1-in. shank turret tools. Heavy duty cross slide with front and rear tool blocks has screw-operated wedges for adjusting height of cutting tools. Accessories include air-operated bar feeds, air-operated collet and chucking attachments, coolant systems, step chucks and closers, two-speed motors, and controls. Made by **Sheldon Machine Co.**, 4215 N. Knox Ave., Chicago 41, Ill.

For more details circle NED-525 E8 on enclosed inquiry slip



Positive Low-friction Sealing at Pressures Less than 1 PSI with the Minnesota Rubber

QUAD® RING

Check these exclusive QUAD RING features:

- 4-lip sealing action, positive to less than 1 PSI
- Injection-molded for toughness, density
- No parting line on sealing surface
- Low-friction sealing . . . eliminates "spiral twist"
- Requires only 60-100 micro-inch groove finish

Write for free samples of the exclusive Minnesota Rubber QUAD RING; also for free 16-page brochure describing M-R's extensive facilities.

MINNESOTA RUBBER COMPANY, Dept. 612
3630 Wooddale Avenue, Minneapolis 16, Minn.
Originators of Modern Rubber Injection Molding

For more details circle NED-526 E8 on enclosed inquiry slip

NOW! . . . you can build custom conveyors from these standard components!

May-Fran conveyor standardization cuts materials handling costs in the metalworking industry

ANY SIZE . . . ANY SHAPE

Through standardization, you now can construct a "customized" conveyor to meet individual job requirements. The May-Fran components, mass produced . . . can be assembled into virtually any type of hinged-steel conveyor for the handling of stampings, formed metal parts, forgings, scrap, chips and turnings.

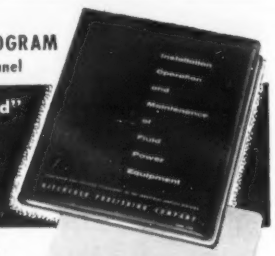
Straight sections, concave or convex sections, take-up and discharge-end sections can be furnished to meet requirements of belt width as well as load bearing and volume capacities. These fabricated sections can be furnished immediately, from stock, at low cost.

MAY-FRAN ENGINEERING, INC.

May-Fran Engineering, Inc.
1711 Clarkstone Rd., Cleveland 12, Ohio
Please send me (free) MF-600
Name
Title
Company
7853-MF City Zone State

For more details circle NED-527 E8 on enclosed inquiry slip

Now . . . for the first time—
A FLUID POWER TRAINING PROGRAM
to fill industry's need for trained personnel



Hitchcock's NEW "job-related" home study course "INSTALLATION, OPERATION and MAINTENANCE of FLUID POWER EQUIPMENT

The problem of developing properly trained, qualified personnel to install, operate and maintain FLUID POWER EQUIPMENT becomes greater day by day. Design simplification and "advanced mechanization" continually expands and increases the uses of FLUID POWER to increase production and operating efficiency in all phases of industry.

An up-to-date practical course of study covering Theory, Fundamentals of operation, Application, Diagnosis and Repair for all types of hydraulic and pneumatic equipment and controls.

Hitchcock Publishing collaborated with two of the nation's leading fluid power authorities to develop this program. Now, men can be trained "on-the-job" through home-study and daily direction in the development of practical skills in fluid power.

Hitchcock's course is available to company sponsored group enrollments or individuals on a low-cost basis in a convenient, practical 18 chapter study course. Upon completion of the course, students will attend a 2 day work-shop session for practical review, application and discussion of the material covered.

Investigate **the advantages of Hitchcock's FLUID POWER home-study course for training individuals to fill your fluid power personnel needs. You'll benefit through increased production and operating efficiency. Send for complete information and enrollment forms today !**

HITCHCOCK Publishing Company / Dept. of Training & Education, Industrial Services Division, 222 E. WILLOW AVE., WHEATON, ILLINOIS

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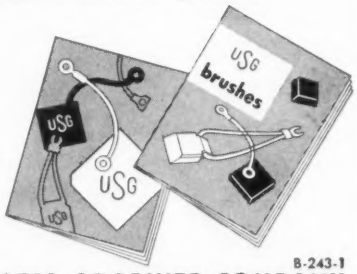
USG®

BRUSHES

The solution to many major or minor brush problems can be solved with United States Graphite Company's USG Brushes. The shunt connections are permanent. Sizes are accurate for each application from fractional horsepower to locomotive diesel generator. Grades include carbon, carbon-graphite, electrographilitic, graphite, metal-graphite and silver graphite.

There is helpful, useful data in the complete but CONCISE USG Brush catalog B-56 and the USG grade list. Write for your copies today.



B-243-1

THE UNITED STATES GRAPHITE COMPANY
DIVISION OF THE WICKES CORPORATION • SAGINAW 10, MICHIGAN

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HALT PRODUCTION LOSS from belt lacing downtime

You cut unproductive downtime and save maintenance time and expense 2 ways with Clipper Hooks and Lacers. 1. Clipper machine-laced joints outlast other belt joints several times over to minimize replacement. 2. When worn belts must be replaced or slack belts tightened, the Clipper machine method is faster than other methods.

Start saving money today with Clipper Hooks and Lacers. Write for Bulletin 157.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

976 Front Ave., N. W., Grand Rapids 2, Michigan

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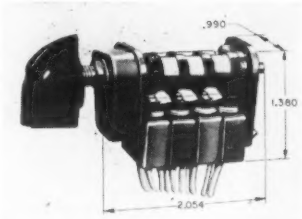
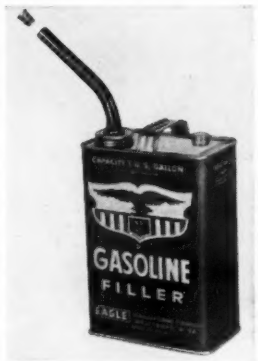
SELECTOR SWITCH ASSEMBLY
has −65 to 212° F operating range



Environmentproof Series 25AS subminiature rotary selector switch assembly is used on aircraft and electronic control panels where space is at a premium. Assemblies operate in −65 to 212° F range and are supplied with from one to eight switching units and two to eight detent positions. Switching units are sealed with an elastomer seal bonded to pin plunger and aluminum housing. Lead wires are embedded in epoxy. With seals deliberately broken, each basic switching unit is rated 3 amp, 28 v dc inductive load at sea level and 2.5 amp, 28 v dc inductive at 50,000 ft. Made by **Minneapolis-Honeywell Regulator Co.**, Micro Switch Div., 205 S. Chicago Ave., Freeport, Ill.

▲ For more details circle **NED-532 E8** on enclosed inquiry slip ▲

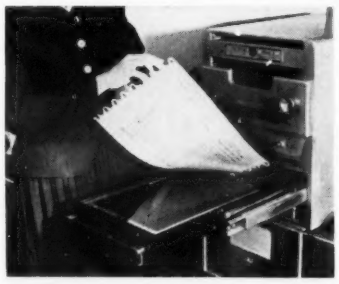
GASOLINE CANS
1 and 2-gal sizes with spouts



Made from lithographed, tinned steel, these 1 and 2-gal, oblong-shaped gasoline filler cans have a vent for fast pouring. Both sizes are equipped with a 6-in., sparkproof Hy-Car rubber, angled spout which is formed to the proper pouring position to eliminate spilling from snap-back action. The spout has a removable brass screen filter, or strainer and rubber plug to seal the opening when not in use. It is impervious to oil, grease, or gasoline. Made by **Eagle Mfg. Co.**, 2545 Charles St., Wellsburg, W. Va.

▲ For more details circle **NED-533 E8** on enclosed inquiry slip ▲

METAL OFFSET MASTERS
can be prepared by xerography



Enlarged, reduced, or same-size metal offset masters can now be prepared with standard XeroX copying equipment in only 4 min. A powder image is produced in conventional manner on a XeroX plate, then transferred electrostatically to the metal master and fused by heat. Metal masters are relatively low in cost, afford long production runs, and assure high quality reproduction. Tests with unsensitized aluminum masters indicate runs of 100,000 or more. Xerography process copies anything written, printed, typed, or drawn. Equipment made by **Haloid Co.**, Dept. PX-226, 2-20 Haloid St., Rochester 3, N. Y.

▲ For more details circle **NED-534 E8** on enclosed inquiry slip ▲

POWER CORD ASSORTMENT
cords range up to 30 ft long

All the tools and components necessary for converting any electrical device to detachable power input in 10 minutes or less are provided in this detachable power cord assortment. Cords in both two and three-wire types range in length up to 30 ft. The compact Uni-Plug mounts in any electrical device such as FHP motor, soldering iron, office machine, or electronic equipment, for foolproof connection of power cord. Assortment is intended for designing original equipment as well as servicing and maintenance of existing equipment. Offered by **Alden Products Co.**, Dept. DPCA-78, 117 N. Main St., Brockton 64, Mass.

▲ For more details circle **NED-535 E8** on enclosed inquiry slip ▲

your plant and your workers are *Safer*...

when they use Alco-Lite industrial ladders

type 400

Extra bracing and riveting throughout. Rubber feet prevent slipping.

These rugged ALCO-LITE Ladders are made of industrial type aluminum alloy. They are completely non-sparking and safe to use around highly inflammable materials. They can't rust, rot, splinter or burn. They're so easy to lift and handle, yet are much stronger than any wood ladder. Each step is corrugated for safety and riveted to the side channels with a total of eight rivets. ALCO-LITE Ladders more than meet ASA and Metal Ladders Association standards.

FREE! STEPLADDER FOLDER

ALCO-LITE Aluminum Ladder Co.
WORTHINGTON, PA. Dept. A1

▲ For more details circle **NED-536 E8** on enclosed inquiry slip ▲

New, Lightweight, Powerful FLEXIBLE TOOL SHAFT
Connects To Any Motor

Stow flexible tool shafts increase precision, eliminate operator fatigue on production grinding, polishing, sanding and other finishing operations in which the operator must hold the tool for long periods of time. Up to 3 HP can be transmitted through these new tool shafts, which consist of a core made of highest grade music wire rotating inside a rubber-covered casing. Each shaft furnished with ball bearing motor connection and high-speed ball bearing handpiece with removable wheel Arbor having ½-20" threads. An angle head can be used in place of the handpiece as shown in the photograph.

Four Sizes of these shafts are available . . . models 38, 40, 50 and 63, which come in 6-foot standard lengths. The largest shaft, model 63, will handle 3 HP at speeds up to 6900 RPM and has a maximum capacity for various accessories as follows: grinding wheel, 8" x 1"; buffing wheel, 8" x 1"; sanding disc, 9" diameter; sanding drum, 6" x 2½"; wire brush, 8" x 2"; steel drills, ½" diameter.

Write for Catalog 57

STOW MANUFACTURING CO.
26 Shear St. **Binghamton, New York**

▲ For more details circle **NED-537 E8** on enclosed inquiry slip ▲

INDISPENSABLE!

the new CATALOG C-5

***Sier Bath* FLEXIBLE GEAR COUPLINGS**

Invaluable information about the lowest priced, highest capacity flexible gear coupling available . . . a new, complete catalog covering everything from installation to engineering specifications. The entire range of Sier-Bath types and sizes at your fingertips, with details on special types also given.

Write today for Catalog C-5.

INSIDE the New Catalog

- Cost-cutting Advantages
- Simplicity of Installation
- Typical Applications
- Complete Specifications on Standard, Mill-Motor, Vertical Shaft, Floating Shaft, Spacer, Heavy Duty, Cut-Out and Shear-Pin Types.
- Enlarged section of Special Types
- Engineering Data

Sier-Bath **GEAR and PUMP CO., INC.**
FLEXIBLE COUPLING DIVISION
9242 Hudson Blvd., North Bergen, N. J.
Founded 1905 Member A.G.M.A.

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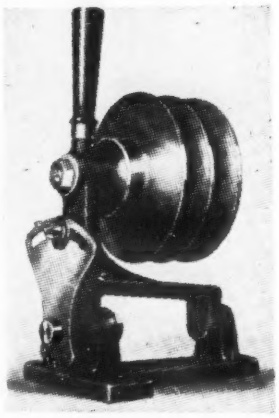
VARIABLE SPEED CONTROL



Variable speed control of V-belt and equipment up to a maximum 3 to 1 ratio is provided by this single lever controlled unit. Mechanically simple in design and sturdily constructed to withstand hardest service, models 1A and 2A Toledo variable speed controls have numerous unique features including: plain, smooth pulley, eliminating noise and vibration; stepless speed variation up to full 3 to 1 ratio; minimum pulley diameters are increased to transmit greater H.P. over entire range; new pulley design providing cylindrical bottom for V-belts which fixes minimum pitch diameter, preventing damage to belts and giving increased torque; single arm support, for easy belt application; large shaft, oilite bearings and lubricant reservoir; sector plate serving as dial indicator and additional locking medium; unusually attractive prices.

Wheel assemblies can also be purchased without mountings for application on machines providing built-in speed control.

If you have a variable speed control problem, either on plant equipment or on machinery you build for sale, investigate the Toledo variable speed control . . . you'll be interested in its efficiency and low price. Ratios as high as 10 to 1 are available. **The Toledo Timer Co.,** 2224 Albion St., Toledo, O. Adv.

▲ For more details circle **NED-539 E8** on enclosed inquiry slip ▲

AIR-POWERED STENCIL CUTTER
attaches to new or existing machines

Power-Pac unit for cutting stencils with air power will fit all existing Ideal stencil machines. New machines can be shipped with the attachment. Device has a two-way, built-in, air cylinder for positive cut and return cycle, controlled with two manually-operated pushbutton valves. Operator merely selects the desired letter and pushes the button. Two models which will fit all stencil machines require no electrical connections. Made by **Ideal Stencil Machine Co.,** Dept. NED, 134 Iowa Ave., Belleville, Ill.

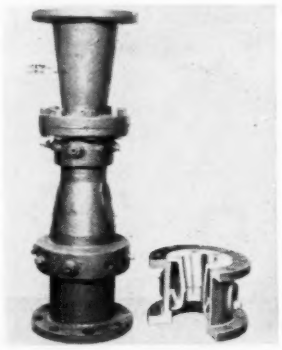
▲ For more details circle **NED-542 E8** on enclosed inquiry slip ▲

MINIATURE DIFFERENTIAL
rated for 5-6 oz-in. load

This differential is designed for miniature servo and computer applications. Weighing only 0.2 oz, unit is the smallest available for a 1/8-in. shaft. It is rated for 5 to 6 oz-in. maximum load at operating speed of 500 rpm. Made by **Waldorf Instrument Co.,** Electronics Div., Huntington Station, Long Island, N. Y.

▲ For more details circle **NED-543 E8** on enclosed inquiry slip ▲

TWIN-THROAT VENTURI
meters water, sewage, air, fluids



High differential pressure and low head loss are achieved in this Twin-Throat Venturi for metering water, sewage, air, and other fluids and gases. Low pressure is taken from hydraulically-streamlined body instead of from a wall. Body is placed in center of the narrowest cross-section where pressure is further lowered by locally increased velocities around it. Thus, a high differential is obtained without materially changing the energy conversion in the tube, while head loss remains practically the same. Shorter laying length of the Infilco unit is shown at right. Full range of sizes is available. Made by **Infilco Inc.,** Dept. N, Box 5033, Tucson, Ariz.

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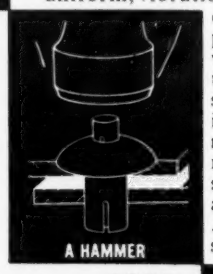
A SOUTHCO DRIVE RIVET

3 STEPS TO
FAST, ECONOMICAL
SOUTHCO
RIVETING

SOUTHCO Drive Rivets, for blind or open applications, make a secure, uniform, vibration-resistant joint every time. Simply hit the pin with a hammer—they set themselves. No bucking, no finishing necessary. A wide range of head styles, diameters and grip lengths . . . aluminum or steel.



- *No special tools*
- *Real pull-up*
- *As easy as driving a nail*

SEND FOR *FREE* RIVET FOLDER
Write to: Southco Division, South Chester Corp., 243 Industrial Highway, Lester, Pa.

SOUTHCO FASTENERS LION
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HANNA
Fluid Power CYLINDERS
give you
POWER
FOR PRODUCTION

■ Hanna Pneumatic and Hydraulic Cylinder power helps cut costs and increases production by replacing manual operations with perfectly controlled power. Hanna Fluid Power Cylinders are available for air operation up to 250 psi., hydraulic up to 750 psi., in a variety of sizes and mounting styles. ***WRITE FOR CATALOG 750B***

HANNA ENGINEERING WORKS
HYDRAULIC AND PNEUMATIC EQUIPMENT . . CYLINDERS . . VALVES
1759 Elston Avenue, Chicago 22, Illinois

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S.S.White

PLASTIC PLUGS AND CAPS
FULL PROTECTION
EASY TO INSTALL
EASY TO REMOVE
NON-SHREDDING

S.S.WHITE Plastic Plugs and Caps give full, *sure* protection against damage in handling . . . storing . . . or shipping. Installation requires only *seconds*. Your customers will give you a vote of thanks for using these easy, instantly hand-removable non-shredding protectors.

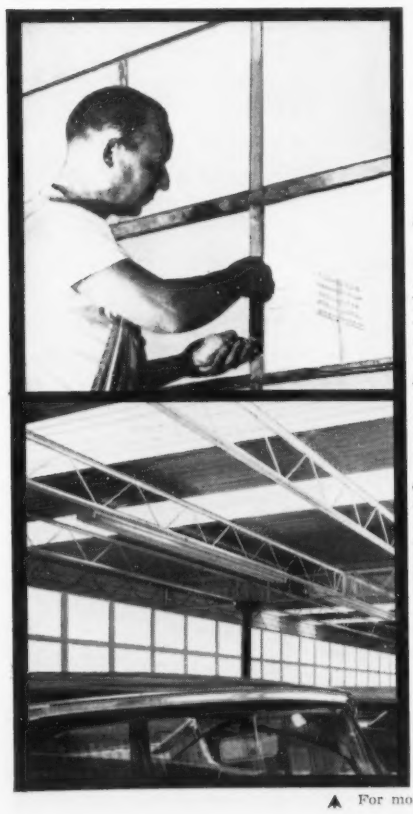
QUALITY LINE Caps and Plugs (Acetate)—strong, tough, non-brittle, shock-resistant. Impervious to petroleum-base oils and greases.

THE ECONOMY LINE (Elastoplastic Vinylite) also gives these important protective advantages, but at lower cost.

Immediate delivery from stock. Write for samples and literature. Ask for Bulletin P5708. (Dept. 7P)

S.S.White PLASTICS DIVISION
10 East 40th Street, New York 16, New York
Western Office: 1839 West Pico Blvd., Los Angeles 6, Calif.

▲ For more details circle **NED-546 E8** on enclosed inquiry slip ▲



"Changing to *FILON*® glazing panes saves us thousands in maintenance costs every year!"
say chief engineers in all parts of the country

When you glaze, skylight or sidelight your plant with shatterproof FILON, you cut maintenance costs where it counts most!

End window breakage. FILON is shatterproof, can not crack or splinter, thus eliminating injuries to workers. Proof against impact damage, flying objects, vibration, hail, sonic blast, other industrial hazards.

Eliminate glass painting. Select the FILON color that provides the desired amount of glare-free, diffused light. All FILON colors are built-in to last, even against acids, fumes and corrosion. *Super-smooth* surface, easily washed by hose.

Insist on the FILON *label on every panel with the* ***5-Way FILON Guarantee***

- Superior Fiberglass-and-Nylon reinforced strength.
- Uniform thickness for easier installation and better diffusion of light and color.
- Shatterproof for absolute safety.
- Weatherproof for maximum durability.
- Exceeds standards published by U.S. Bureau of Standards.

Lower lighting costs. FILON floods working areas with evenly diffused daylight, cuts artificial lighting costs. Increases production efficiency by reducing eye-strain.

Low-cost, easy installation. FILON glazing panes are pre-cut to standard sash sizes, install like glass. FILON building panels for skylighting and sidelighting nest perfectly with other building materials, require no sash or framing.

Specify low-cost FILON to replace broken windows and skylights in present plants, and in your new plant construction.

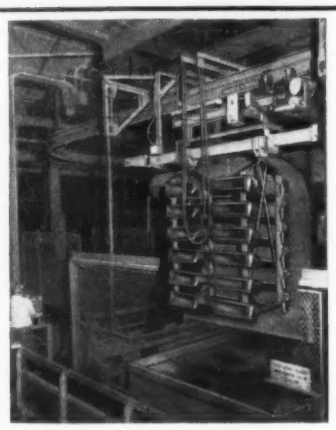
FREE BOOKLET **with full details, light transmission chart. Write to Filon Plastics Corp., 125 Lomita Street, El Segundo 5, California, or consult Sweet's File.**

FILON PLASTICS CORPORATION
Los Angeles • New York • Chicago
Atlanta • Dallas • San Francisco

▲ For more details circle **NED-541 E8** on enclosed inquiry slip ▲

Ford Motor Co. installs

AMERICAN MONORAIL in one of WORLD'S BIGGEST CHROME PLATING PLANTS



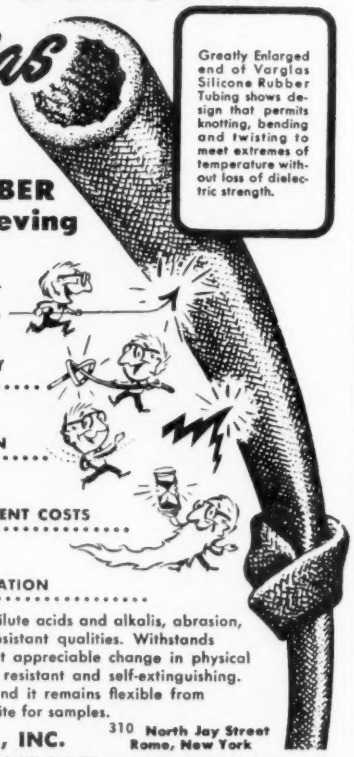
Ford Motor Co. has installed an American Monorail system almost 9/10 of a mile long with 4 automatic track switches and 16 automatic lift or dip sections in the track. It serves two Udylite automatic plating machines, each of which is approximately 750 feet long.
A 3-ton Monorail system feeds carriers loaded with Ford bumpers into each plating machine and removes the carriers at the finished end.
Everything is automatic with provision for manual control at critical points.
This is another typical example of cooperation between Monorail, Udylite, and Ford engineers.

AMERICAN MONORAIL 13116 ATHENS AVENUE CLEVELAND 7, OHIO

▲ For more details circle NED-547 E8 on enclosed inquiry slip ▲

5 Ways Better...

Varglas SILICONE RUBBER Tubing and Sleeving



Greatly Enlarged end of Varglas Silicone Rubber Tubing shows design that permits knotting, bending and twisting to meet extremes of temperature without loss of dielectric strength.

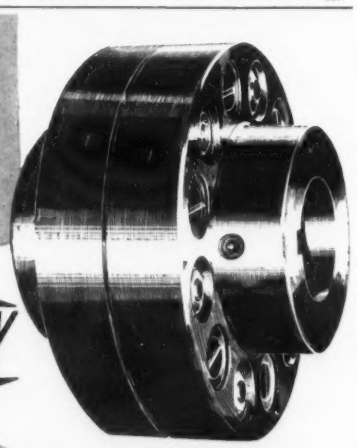
1 WON'T CRACK, PEEL OR CRAZE
2 GREATER FLEXIBILITY
3 HIGH DIELECTRIC RETENTION
4 LONG LIFE CUTS REPLACEMENT COSTS
5 VIVID COLORS FOR READY IDENTIFICATION

Resistant to all oils, alcohols, dilute acids and alkalis, abrasion, fungi as well as fine water resistant qualities. Withstands 250° C for 1,000 hours without appreciable change in physical or dielectric properties. Flame resistant and self-extinguishing. Twist, bend, wrap or knot it and it remains flexible from minus 90° F to plus 600° F. Write for samples.

VARFLEX SALES CO., INC. 310 North Jay Street Rome, New York

▲ For more details circle NED-548 E8 on enclosed inquiry slip ▲

IT PAYS TO SPECIFY



AJAX flexible couplings when you order new equipment

The finest equipment deserves the finest couplings,—safeguard against destructive wear due to unavoidable misalignment. Always specify AJAX FLEXIBLE COUPLINGS when you order. Standard of the industry for over 30 years.

AJAX FLEXIBLE COUPLING CO. Inc. WESTFIELD, N. Y.

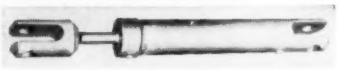
▲ For more details circle NED-549 E8 on enclosed inquiry slip ▲

QUICK-CHANGE CHUCK for drilling, boring, reaming

Fast, safe tool changes are made for sequence drilling, counterboring, reaming, and tapping operations in single-spindle machines with this Safe-Guard quick-change chuck. Operator merely grips the plastic safety guard while lifting the locking ring of the chuck with the other hand. When inserting the tool on a rotating spindle, the safety guard permits the collet to turn freely within the guard and pick up torque from the spindle gradually. Guard also supports the collet without slippage to minimize danger of dropping or breaking cutting tools. Collets are available for No. 0 to 5 chucks with outside diameters of 11/16 to 3¼ in. Made by **Scully-Jones & Co.**, 1916 S. Rockwell St., Chicago 8, Ill.

▲ For more details circle NED-550 E8 on enclosed inquiry slip ▲

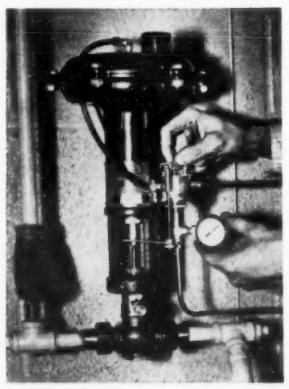
AIR-HYDRAULIC CYLINDERS for industrial and mobile uses



Offered in eight bore sizes ranging from 1½ to 6 in., line of air and oil cylinders is designed for industrial, mobile, and farm equipment uses. Clevis, eye, tube, front flange, rear flange, rabbit, pilot, centerline, side lug, and foot mountings are available. O-ring seal types handle pressures to 2000 psi, while cup or Twin Pak packings take up to 3000 psi. Strokes to 10 ft can be supplied. Made by **HemcO Mfg., Inc.**, Dept. D, Argonia, Kans.

▲ For more details circle NED-551 E8 on enclosed inquiry slip ▲

PNEUMATIC RELAY positions motors and valves



Accurate control of pneumatic motors and valves is provided by this Sta-Put adjustable pneumatic relay. Adjusting screw on relay can be set to delay operation of the motor or valve until control pressure reaches desired point between 2 and 15 psi. Distance of motor or valve stem travel for various changes of control pressures can also be adjusted. Relay can be fitted to 3, 4, and 6-in. pneumatic motors, and 8 and 12-in. diaphragm valves. One relay can handle installations of four 6-in. or ten 4-in. motors. Normal air pressure recommended is 20 psi. Performance is reliable between 20 to 180° F. Made by **Powers Regulator Co.**, Dept. NDC, 3434 Oakton St., Skokie, Ill.

▲ For more details circle NED-552 E8 on enclosed inquiry slip ▲

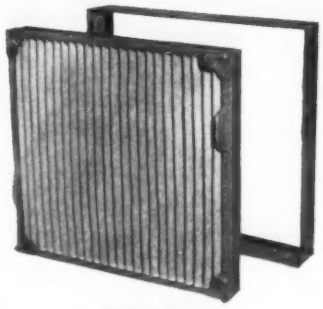
QUARTZ TUBING offered in polygonal shapes

Square, triangular, hexagonal, and other noncircular and polygonal cross sections are available in fused quartz tubing. Product has good optical properties, high melting point and temperature strength, and a softening point of 1667° F. Its very low coefficient of expansion makes it a good insulator. Product is essentially free of boron impurities. Tubing is sold by the piece, foot, or pound, according to the type. Some sizes can be shipped from stock, and made-to-order shapes can have a maximum circumference up to 2 in. per side on a square. Made by **General Electric Co.**, Dept. 166-NED, Nela Park, Cleveland 12, Ohio.

▲ For more details circle NED-553 E8 on enclosed inquiry slip ▲

ALL-PURPOSE AIR FILTER

DRY PANEL VENTILATION FILTER



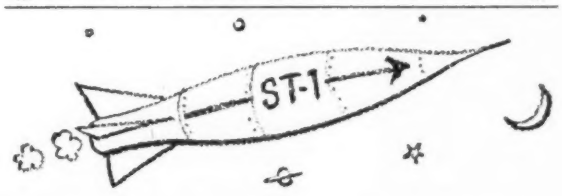
MODEL WKE DRY PANEL FILTER

The Dollinger Dry Panel Filter operates with any filtering material that comes in sheet form and can be crimped. Preformed filtering elements are available for quick and easy replacement when necessary.

Whatever your filtering problems, wherever you are, there's a Dollinger representative ready to help you solve it... write today and ask for ventilating filter catalogs, Dollinger Corporation, 49 Centre Park, Rochester 3, N. Y.

DOLLINGER PROTECTOMOTOR STAYNEW FILTERS

▲ For more details circle NED-554 E8 on enclosed inquiry slip ▲



Will the ST-1 orbit the earth?

Gosh no, once you put it in your shop, it'll probably stay right there for years and years.

Well, is it ram-jet powered?

It's got a ram alright, but it's hydraulically powered. Works real smooth and easy.

Does that develop sufficient thrust?

Sure, you can test most any spotweld, strip, or wire within its 20,000 lb. capacity.

Will it ever break the sound barrier?

What! We've got skilled people making the ST-1, it doesn't make hardly any noise.

Say, what kind of a missile is this?

The ST-1 isn't a missile, it's a tensile testing machine, and we've been making it and other quality testing machines for years.

You better write for more information, friend!

DETROIT TESTING MACHINE COMPANY
9394 Grinnell Avenue, Detroit 13, Michigan

▲ For more details circle NED-555 E8 on enclosed inquiry slip ▲

CUT PRODUCTION COSTS!

MARK NAME PLATES 5 TIMES FASTER

MODEL EMT-2
ELECTRIC TAG TYPEWRITER
A touch of the finger delivers up to 2 tons pressure for deep, legible impressions in metal or plastic tags.

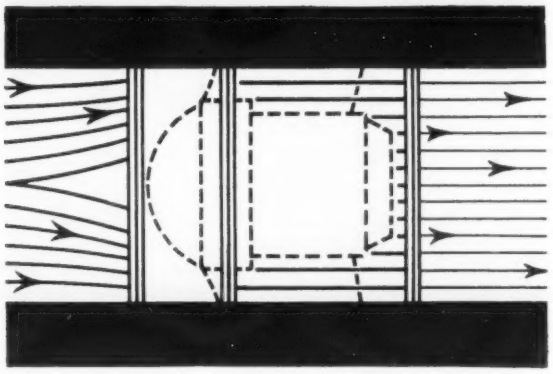
—WITH— Automark ELECTRIC TAG MARKING MACHINES

MODEL SRST-2 HI-SPEED TAG MARKING MACHINE
Automatically marks BOTH constant and serial numbers at any desired speed up to 8,000 tags per hour!
MANUFACTURERERS' AGENTS Some Territories Still Available
Send Now for Bulletin

DEFIANCE MACHINE & TOOL COMPANY
1920 S. VANDEVENTER Dep't. QD ST. LOUIS 10, MO.

▲ For more details circle NED-556 E8 on enclosed inquiry slip ▲

SAVE POWER... JOY FAN BLADES ADJUST TO THE JOB



You get more power per pound with in-line design and the aerodynamically balanced blades of Joy Axivane® Fans. Adjustable blades correct for poor duct work and unpredictable system resistance.

WSW I 6937-212

Find Out More about Joy High-Performance Fans... Get FREE BULLETIN 212-54

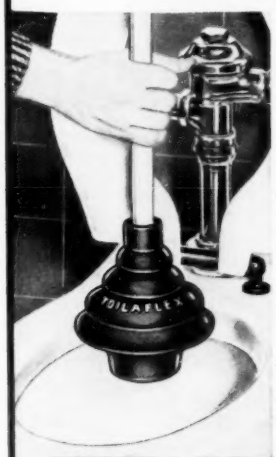
JOY MANUFACTURING COMPANY
Oliver Building, Pittsburgh 22, Pa.
In Canada: Joy Manufacturing Company (Canada), Limited, Galt, Ontario

▲ For more details circle NED-557 E8 on enclosed inquiry slip ▲

POWERFUL NEW PLUNGER CLEARS

CLOGGED TOILETS

in a jiffy!



Clear messy, stuffed toilets
Cut maintenance costs with

TOILAFLEX

Toilet ALL ANGLE Plunger

Ordinary plungers don't seat properly. They permit compressed air and water to splash back. Thus you not only have a mess, but you lose the very pressure you need to clear the obstruction.

With "TOILAFLEX", expressly designed for toilets, no air or water can escape. The full pressure plows through the clogging mass and swishes it down. Can't miss!

Get a "TOILAFLEX" for your home too. Positive insurance against stuffed toilet.

- Double cup, double-pressure
- Tapered tail gives air-tight fit
- Designed to flex at any angle
- Centers, can't skid around

$2.65 Fully Guaranteed

Order from your Supplier of Hardware or Janitor Supplies

THE STEVENS-BURT CO., NEW BRUNSWICK, N. J.
A Division of The Water Master Company

▲ For more details circle NED-558 E8 on enclosed inquiry slip ▲

Multiple Protection in Contaminated Atmosphere

AO 75N HOOD-RESPIRATOR COMBINATION

The No. 75N comes with any one of nine AO R2000 Respirators and offers protection against dusts, vapors, gases, paint spray and other hazards. The 75N Hood is made of lightweight nylon. Keeps workers cool and comfortable. Large, removable acetate window provides wide-angle vision. Hood adjusts to any head size. Has under arm drawstrings for snug fit. Hood also available in flame-resistant duck, black or yellow Neoprene coated fabric (for chemical operations) and in white muslin. Your nearest American Optical Safety Products Representative can supply you.

Always insist on Trademarked Safety Products

American Optical COMPANY SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASS.

1833-1958 • 125 LEADERSHIP YEARS

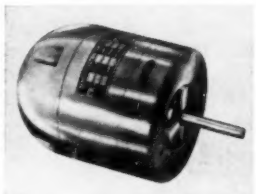
▲ For more details circle NED-559 E8 on enclosed inquiry slip ▲

NUT & SCREW RUNNER operates in low torque range

Air powered and weighing less than 1 lb, the Nelson nut runner runs and torques nuts or screws in the range from 6 to 40 oz-in. A nut can be applied and tightened in ½ sec. Model PM-3 tool is 11½ in. long, 1¾ in. wide, has a ¼-in. hex socket tool holder, and makes eight revolutions per cycle. Air consumption at 60-psi is 8 cu in. per cycle. Model PM-3T has the same specifications except that the maximum length is 10¾ in. and width is 7 in. Made by **Iseman Corp.**, Engineering Div., 11th & Dakota, Sioux Falls, S. Dak.

▲ For more details circle NED-560 E8 on enclosed inquiry slip ▲

SYNCHRONOUS MOTOR in sizes from 1/100 to 1 hp

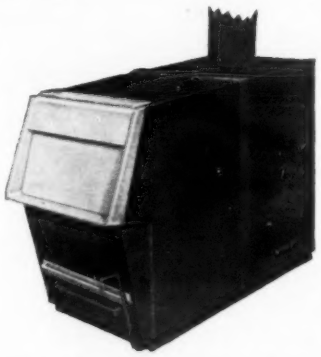


Excellent damping and up to 90 per cent efficiency are featured by the Hyspersyn hysteresis-start synchronous motor. Unit has high starting torque, smooth synchronization with hysteresis torque, and large pull-out using ceramic or Alnico permanent magnet. It is offered in all speeds and sizes from 1/100 to 1 hp. Made by **Bekey Electric Co.**, Dept. NED, 1327 S. Main St., Los Angeles 15, Calif.

▲ For more details circle NED-561 E8 on enclosed inquiry slip ▲

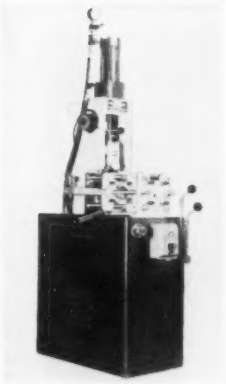
PORTABLE INCINERATOR consumes 4 to 6 drums of waste daily

Especially suited for small industrial plant use, this Deluxe Disposall is designed to burn 4 to 6 drums of waste per day. Waist-high, inclined, front-closing door is operated by E-Z foot pedal, leaving both hands of user free to handle the waste container. A drawer type ash removal pan facilitates emptying. This portable incinerator has a heavy steel outer casing, separated from the 2½-in. thick wall of fire brick by 1 in. of circulating air space. The primary burning chamber is lined with heat-retaining aluminum foil sheeting. Three sizes have burning capacities of 50, 75, and 100 lb per hr. It can be shipped complete or knocked-down for easy assembly on the job. Accessory equipment includes low blast gas burner with automatic flame control, timer, and induced draft fan. Made by **Joseph Goder Incinerators**, 4135 N. Honore St., Chicago 13, Ill.



▲ For more details circle NED-562 E8 on enclosed inquiry slip ▲

PLASTIC INJECTION MOLDER handles all thermoplastics for molding small items up to 1 oz

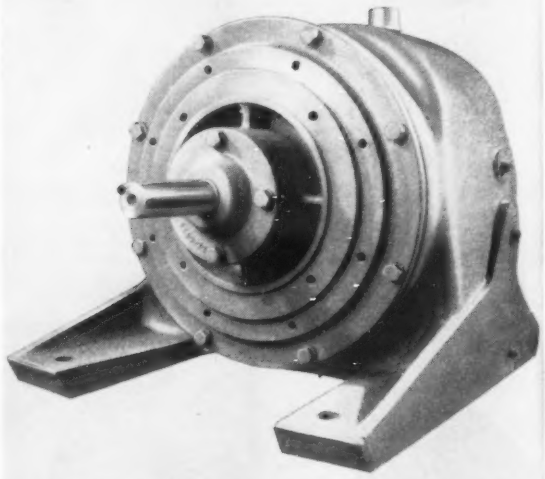


This Mini-jector Universal Super-Hornet plastic injection machine will adjust to the many variables of a diversified plastic item program. It handles all thermoplastics, including nylon, and molds items weighing up to 1 oz. Machine accommodates both types of parting-line sprued molds as well as the larger straight-block mold. For intricate insert molding of wire, cords, loose cores, or for encapsulating, a smaller V-block mold is used.

Special nylon molding assembly adapts machine for both conventional and insert molding of nylon items. Interchange of injection cylinder assemblies affords ⅓ to 1-oz capacity selectivity. Machines are available in different models to suit requirements, with air or hydraulic power, lever or pushbutton controls. Made by **Newbury Industries, Inc.**, Box 24ED, Newbury, Ohio.

▲ For more details circle NED-563 E8 on enclosed inquiry slip ▲

MODULINE GEAR UNITS



EXCLUSIVE DEVELOPMENT OF WESTINGHOUSE ELECTRIC CORPORATION

ORIGINAL in . . . SIMPLICITY

Internal shafts are splined and threaded to simplify gear and pinion mounting. Only a wrench is needed to disassemble and replace or modify components. Awkward gear pullers and fittings are eliminated. Only seven Moduline unit sizes assemble into over 20,000 different gearmotors and speed reducers.

VERSATILITY

Moduline gearmotors, speed reducers and package motor reducer drives will handle any job from 1 to 75 hp, 1.9 to 420 rpm. Concentric shaft and right angle units for floor, wall, ceiling or angle mounting are built by selecting the proper modules to meet customer drive requirements. Modifications or drive changes can be made on the job.

DEPENDABILITY

Strong spin-flame, heat-treated, alloy steel gears and proportioned shafts, bearings and structural parts make Moduline units outstanding. Gear teeth are ground so accurately that they meet AGMA standards for master gears. The precision construction and high load-carrying capacity of Moduline units mean years of quiet, trouble-free performance.

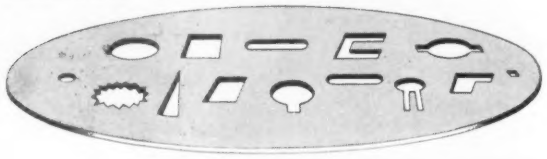
J-07366

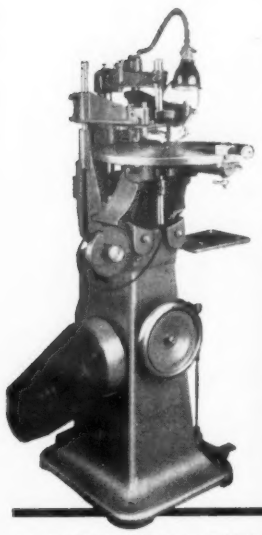
This free booklet describes Moduline . . . a complete line of speed reducers . . . gearmotors . . . and package motor reducer drives. For your copy write: Westinghouse Electric Corporation, Gearing Division, 200 McCandless Avenue, Pittsburgh 1, Penna.

YOU CAN BE SURE... IF IT'S Westinghouse

▲ For more details circle NED-564 E8 on enclosed inquiry slip ▲

FOR CONTOURS LIKE THESE . . .





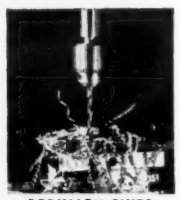
Freak contours – more conventional shapes – internal or external forms. In any case, you'll save valuable time by producing the job on an Oliver of Adrian contour sawing and filing machine.

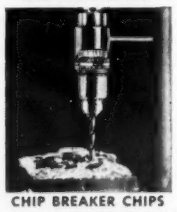
Parts for jigs and fixtures, dies, gages, templates and special machine production can be shaped to dimension faster – easier – at less cost. No hand filing or semi-finishing operations. Better investigate Oliver today. Just write. Available in five sizes – bench or pedestal.

▲ For more details circle NED-567 E8 on enclosed inquiry slip ▲

SHALLOW HOLES . . . DEEP HOLES
DRILL THEM ALL FASTER, BETTER
WITH A *Commander*
DRILL CHIP BREAKER

✓ Small Chips Permit 50% – 400% Increase in Drilling Speeds
✓ Drill 10 Diameters or More in Depth Without Clearing Drill
✓ Better, Smoother, More Accurate Holes


ORDINARY CHIPS


CHIP BREAKER CHIPS

Reciprocating action of the Commander Drill Chip Breaker breaks chips into small pieces that travel up drill flutes . . . permitting higher drilling speeds . . . doubles and triples production of shallow OR deep holes. Long chips which cause drill breakage, scored holes, slow jig and fixture loading, are eliminated—small, easy to handle chips flow up out of hole continuously, permitting coolant to reach cutting edge of drill. Assures longer drill life, more holes per sharpening, more holes per hour.

Your nearby COMMANDER Distributor has the Drill Chip Breaker and other Commander Production Tools.

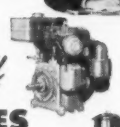
Write FOR CATALOG #851 which describes Commander's Production Tools

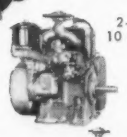
Commander MFG. CO.
4220 W. KINZIE STREET
CHICAGO 24, ILLINOIS

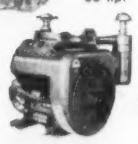
▲ For more details circle NED-568 E8 on enclosed inquiry slip ▲

To meet your Specific Need
...complete power selectivity from 3 to 56 hp.

WISCONSIN *Air-Cooled* ***heavy-duty* ENGINES**


4-cycle single cyl., 3 to 12½ hp.


2-cylinder 10 to 18 hp


V-type 4-cyl., 15 to 56 hp.

The Wisconsin line of Heavy-Duty Air-Cooled Engines offers a complete power range from 3 to 56 hp., in 4-cycle single cylinder, 2- and 4-cylinder models, to fit all power needs in this broad bracket.

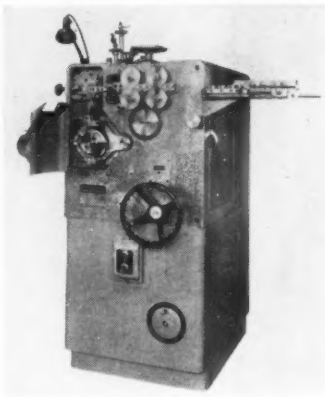
Here is complete power selectivity, practically tailored to the machine and the job. All models have such traditional "Wisconsin" features as: heavy-duty design and construction in all details; basic high torque engineering and performance; dependable, trouble-free air-cooling at all temperatures from low sub-zero to 140° F. — *plus* exclusive specialization in the manufacture of air-cooled engines, backed by more than 2,000 approved service stations.

You can recommend and specify Wisconsin Heavy-Duty Air-Cooled Engines with confidence in your good judgment. Write for copy of engine bulletin S-223.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

▲ For more details circle NED-569 E8 on enclosed inquiry slip ▲

SPRING-MAKING MACHINE
produces 18-180 springs per minute from 0.015 to 0.072-in. wire

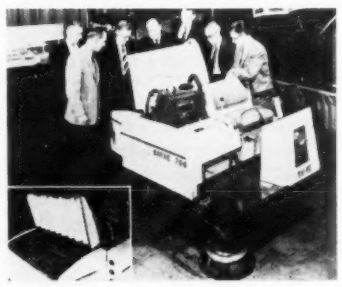


Individual horizontal adjustment of cutter shafts, needle bearing mounting of front end of cutter shafts, large back-up shoulder for feed rolls, and positive backstop clutch which prevents feed rolls from backing up during the cutting cycle are features of the W-11A Springmaker. A redesign of the W-11 Spring Coiler, it has its clutch placed inside and a 10:1 adjustable speed drive.

The torsion attachment allows for use of four cams. It can be rapidly changed from left hand to right hand coiling. Machine handles 0.015 to 0.072-in. wire diameters, 0 to 42-in. wire lengths per spring, and has a coil range of 3/32 to 1 9/16 in. Production is 18 to 180 springs per minute. Various attachments and other wire feeds are available. Made by **Torrington Mfg. Co.**, Torrington, Conn.

▲ For more details circle NED-570 E8 on enclosed inquiry slip ▲

POWER FLOOR SWEEPERS
have high-capacity sleeve filter systems to remove dust from air



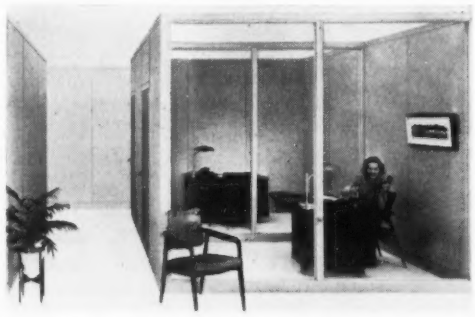
Suitable for indoor or outdoor use, Model 705 and 706 power sweepers will pick up waste matter ranging from fine dust to large beverage bottles. Revolving brooms extend beyond the body to sweep flush with wall, curbs, or equipment. They have large dirt hopper capacity, automotive type steering, full vision, wrap-around bumpers, and quick-change broom assembly.

Both models feature a new Filter-Vac dust control system. Dust-laden air passes through a series of filter sleeves, and dust is deposited directly in the hopper. System provides a 300 per cent greater filtering area than previous models. Dumping of hopper is accomplished by hydraulic power which raises the rear hopper. Model 705 sweeps a 36-in. path and Model 706, a 48-in. path. Latter can sweep in excess of 125,000 sq ft per hr in open areas. Flexible hose attachment makes possible vacuum cleaning of bins, shelves, and machine areas. Made by **Wayne Mfg. Co.**, Dept. ND, 1201 E. Lexington St., Pomona, Calif.

▲ For more details circle NED-571 E8 on enclosed inquiry slip ▲

MOVABLE WALL SYSTEM
adjusts to ceiling, floor variations

Full-flush panels with single line joints and fireproof and sound-resistant steel and glass construction are features of Type HP movable wall system. Adjustable



ceiling trim compensates for ceiling level variations, and adjustable door frames compensate for floor variations, or for different floor coverings on either side of the partition. The narrow 4-in. high base provides for concealed lay-in wiring. Walls are furnished in stock sizes for ceiling heights from 7 ft 3 in. to 9 ft ⅝ in. Panels range from 12 to 60 in. wide, and continuous base strips are 120 in. long. Made by **E. F. Hauserman Co.**, 7562 Grant Ave., Cleveland 5, Ohio.

▲ For more details circle NED-572 E8 on enclosed inquiry slip ▲

BOWSER
PORTABLE WHEEL TANK
TRANSPORTS LIQUIDS . . . . QUICKLY . . . . SAFELY

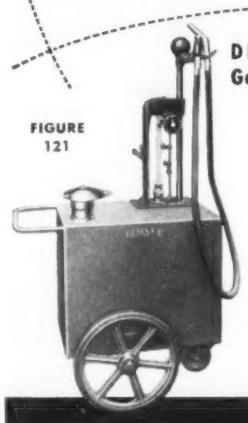


FIGURE 121

DISPENSES AND REGISTERS
Gallons, ½ Gallons, Quarts, Pints

Oils, solvents, process liquids . . . are all transported quickly, easily, safely . . . and dispensed accurately in controlled quantities. A piston-type measuring pump with counter records up to ten gallons and repeats or resets. Protecto-Seal fill-and-vent with built-in flame arrestor assures safe handling of flammable liquids. Anti-drip nozzle. 50-gallon tank. Convenient delivery hose.

ALSO AVAILABLE . . .

Figure 63 Measures quart, pint, or ½-pint. Anti-drip nozzle. Pump is lockable. 65-gal. tank.

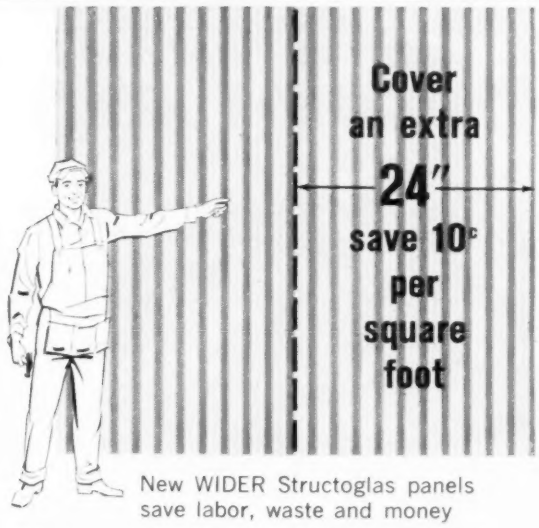
Figure 172 Completely enclosed. Hinged, lockable cover. Same pump and tank as Figure 63.

Figure 41 Floor stand pump for low-level tanks. Measures gals., ½ gals., qts., pints. Lockable.

Figure 109 Dispenses and records gal., ½ gal., qt. and pt. quantities. 65 or 120-gal. tank.

BOWSER, Inc., 1387 EAST CREIGHTON AVENUE FORT WAYNE, INDIANA

▲ For more details circle NED-573 E8 on enclosed inquiry slip ▲



New WIDER Structoglas panels save labor, waste and money

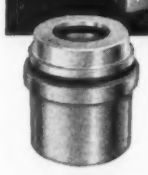
Two new widths of Structoglas reinforced fiber glass panels give you more installed coverage area per dollar than any other panel (51½" for skylights, 50" for glazing, both covering 48"). Wider Structoglas has fewer overlaps, needs less fasteners, takes less time to install. You actually save 10c per square foot when you install 51½" Structoglas instead of ordinary 27½" panels.

Write for specs and prices today! Structoglas Division of International Molded Plastics, Inc. Dept. NES, Cleveland 9, Ohio

structo glas

▲ For more details circle NED-574 E8 on enclosed inquiry slip ▲

MASSIVE QUALITY
where it counts!


MEEHANITE BEARING CARTRIDGE

visit our booth * '58 ASTE TOOL SHOW

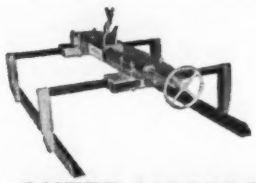
New Cylinders...

New line of Mead air cylinders, 16 sizes, mounts. Larger-than-ever ram bearing holds strict alignment, eases friction. Quick-detachable bearing cartridge to replace ram seals in minutes. Adjustable, convertible cushions, non-cushions or semi-cushions at either or both ends. Universal cylinders with interchangeable mounts (250 PSI). *Millions* of cycles prove they will take it. Get complete data from

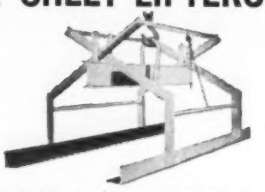
MEAD SPECIALTIES COMPANY
4114 N. Knox Ave.
Dept. NA-58
Chicago 41, Illinois

▲ For more details circle NED-575 E8 on enclosed inquiry slip ▲

lifting problem?



HEPPENSTALL SHEET LIFTERS CAN HANDLE IT!



2 Stock Models, in various sizes, ready for fast delivery

Heppenstall now has quickly available *stock* answers to your problems of handling sheets, plates, racks, pallets, bales, boxes, bins, etc.

J-500 "Low Headroom" style in 2 to 5 ton capacity models, 60" maximum load width, 22" minimum load width, 5' to 9' lengths, overall height as low as 20¾". Available with hand wheel, chain, or motorized controls.

Y-4909 "Non-Automatic" style in 2 to 5 ton capacity models, 42" maximum load width, 18" minimum load width, 35" overall loaded height.

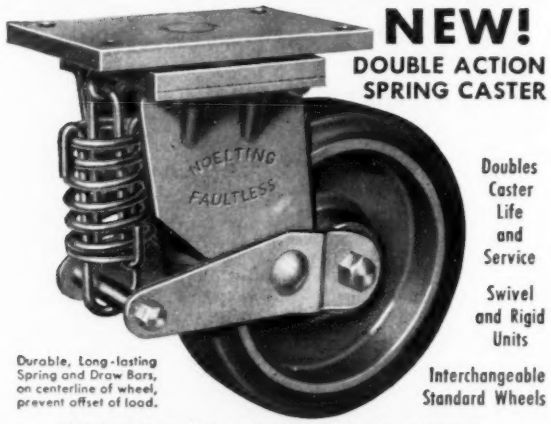
Call or write today for prices and complete details on these and other Heppenstall Tongs for every lifting operation. If you have a special lifting problem, we'll be glad to help you work out a custom design.

Heppenstall Tongs handle everything that hangs from a crane.

HEPPENSTALL COMPANY
501 Sixteenth Street, New Brighton, Pennsylvania

▲ For more details circle NED-576 E8 on enclosed inquiry slip ▲

NØELTING
Faultless
ENGINEERED TRUCK CASTERS
CUT HANDLING COSTS



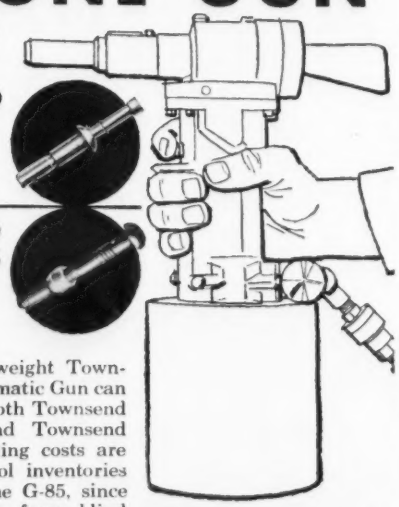
Wheel contacts floor surface at all levels—eliminates bounce—doesn't raise truck when mounting obstacles.

Write for descriptive literature, no obligation.

Faultless Caster Corporation
Evansville 7, Indiana
Offices in Principal Cities—Canada Factory: Stratford, Ont.

▲ For more details circle NED-577 E8 on enclosed inquiry slip ▲

NOW, ONE GUN *sets both*



The new, lightweight Townsend G-85 Pneumatic Gun can be used to set both Townsend blind rivets and Townsend lockbolts*. Tooling costs are reduced and tool inventories simplified by the G-85, since the change-over from blind rivets to lockbolts is made simply by switching tool heads.

Although it has a four-ton pull, the G-85 gun weighs only 10.5 pounds and operates on normal factory air pressures.

Strong, vibration-resistant joints with high clinch and shear values now are easier and more economical than ever to make, using Townsend lockbolts, Cherry and Versa-rivets with the G-85 gun. For complete information on how we can improve your fastening while reducing costs, write Townsend Company, P. O. Box 237-G, New Brighton, Pa.

*Licensed under Huck patents RE22,792; 2,114,493; 2,527,307; 2,531,048; 2,531,049 and 2,754,703

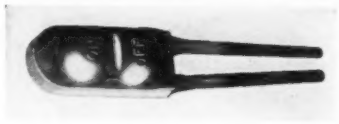
▲ For more details circle NED-578 E8 on enclosed inquiry slip ▲

PARTS BIN DOLLY
accessory for Stackbin system

Handling and storage of parts, tools, and materials in Stackbin parts bins is facilitated through use of the Stackbin dolly which enables one man to handle and move multiple bins easily. Dolly is made of welded sheet steel with a swivel caster on both ends and two rigid casters in the center. Bins nest securely in the dolly, made in various sizes to meet handling requirements. Made by **Stackbin Corp.**, 1081 Main St., Pawtucket, R. I.

▲ For more details circle NED-579 E8 on enclosed inquiry slip ▲

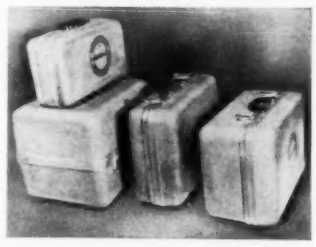
WATERPROOF SWITCH
has stay-on, stay-off feature



Silicone boot that is permanently bonded to the silicone leads protects this switch against water and dust. It has a stay-on, stay-off feature of a toggle switch, but does not have a toggle switch mechanism. Suited for welding applications, it can be furnished with various lead lengths where water, steam, humidity, or chemical solutions are encountered. Electrical rating is 15 amp resistive at 115 v ac. Rated life is a minimum of 25,000 cycles. Made by **Control Products, Inc.**, 306 Sussex St., Harrison 12, N. J.

▲ For more details circle NED-580 E8 on enclosed inquiry slip ▲

MOLDED INSTRUMENT CASES
light in weight, resist fracturing



Made of inert, corrosion and fracture resistant, molded Fiberglas, these stock cases are suited for carrying instruments and testing equipment. They have hardware, but no internal fittings. This permits the user to modify the units internally for specific uses, or the manufacturer will modify them to order. Elasticity of the cases prevents permanent deformation under impact, yet affords high shock absorption to protect equipment from impact. Color pigmented resins used retain their initial appearance after considerable use and require little maintenance. Made by **Skydyne, Inc.**, River Road, Port Jervis 10, N. Y.

▲ For more details circle NED-581 E8 on enclosed inquiry slip ▲

Bench Tops
LAMINATED HARD MAPLE

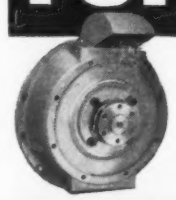
Steel bench bases, legs and drawers available for use with Tolco Tops. Write for complete illustrations and prices.

ESTABLISHED 1894
THE TOLERTON COMPANY
265 N. FREEDOM AVE. · ALLIANCE, OHIO

▲ For more details circle NED-582 E8 on enclosed inquiry slip ▲

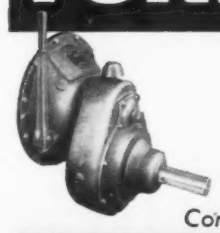
Re-Power With FUNK Modular Units

FUNK TORQUE CONVERTERS



Extend the life of your engines, prevent stalls, eliminate damaging shock loads — re-power with FUNK Torque Converters. Compact units, fit SAE housings. FUNK Standard Flange System easily adapts other FUNK units for your power needs.

FUNK GEAR REDUCTIONS



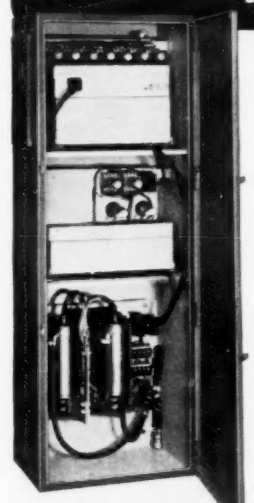
Small, popular-make high speed engines equipped with low-cost FUNK Gear Reductions develop the same power output at substantial savings over large expensive slow speed engines. Eliminate expensive and dangerous V-belt and chain drives. Exclusive FUNK Straddle Mounted Pinion. Proved Performance.

Consult Your Dealer or Write

FUNK MFG. CO.
P. O. BOX 577-C
COFFEYVILLE, KANSAS

▲ For more details circle NED-583 E8 on enclosed inquiry slip ▲

Simplified Precision Welder Control



- Greatly Simplified Circuits
- Timing Accuracy Assured
- Easy Inspection and Maintenance

APPLICATION: for welding stainless steel, nonferrous metals, and other critical spot welding jobs requiring electronic synchronous-precision control. (Available with current wave shape control auxiliaries for aluminum or alloy metals.)

at left • Class 8993 NEMA Type S2H Synchronous-Precision Controller available with 600 or 1200 frame contactor. Can be arranged either for side of machine or wall mounting.

Write for Bulletin 8993

Square D Company,
4041 North Richards Street,
Milwaukee 12, Wisconsin

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE
SQUARE D COMPANY

▲ For more details circle NED-584 E8 on enclosed inquiry slip ▲

GUARANTEED

to give drip-tight leak-proof seal

greatest name in unions

DART

For over 55 years the firm guarantee back of each and every DART UNION sold has been — *"if one should leak through we will give you two"!* The record reveals that less than 1 in every 100,000 has proven to be faulty. The extra wide bronze to bronze seats, precision ground to a true ball joint, mounted in heavy malleable iron pipe ends and protected by an extra heavy union nut, make a drip-tight, leak-proof connection WITHOUT EXCESSIVE WRENCHING time and time again.

Guarantee positive tight connections and extra long service on your pipe lines by using the DART GUARANTEED UNION.

Yours on request: Descriptive brochure on Dart Unions and Union Fittings.

DART UNIONS *Products of* **DART UNION COMPANY PROVIDENCE 5, R. I.**

GENERAL SALES AGENT
THE Fairbanks COMPANY
393 LAFAYETTE STREET, NEW YORK 3, NEW YORK
BRANCHES: NEW YORK 3
PITTSBURGH 22 • BOSTON 10 • ROME, GEORGIA

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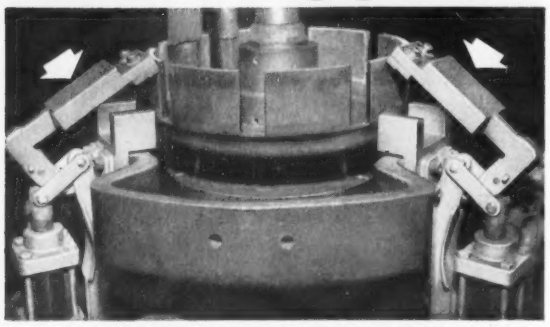
BIG--for big jobs



NEVER SEND A BOY—here's the Knu-Vise clamp AO-200.

LAPEER CLAMPS FOR ARC WELDING

In the plant of a midwestern automotive parts manufacturer, air operated Knu-Vise clamps are an important part of a work holding fixture for arc welding. Shown is the operation where center hubs are welded into the high clutch splitter housing for automatic truck transmissions.

No job for a panty-waist, the husky Lapeer clamps have to grab securely—hold rigidly—let go instantly. They are part of a family of more than 150 models of clamps and pliers designed to do a tremendous number of holding jobs. Some are air-operated, others hand operated. All of them do workhorse jobs in industry holding big parts, small parts, unwieldy parts. Write today for more information.

Manufacturers of over 150 models of manually and air-operated clamps and pliers

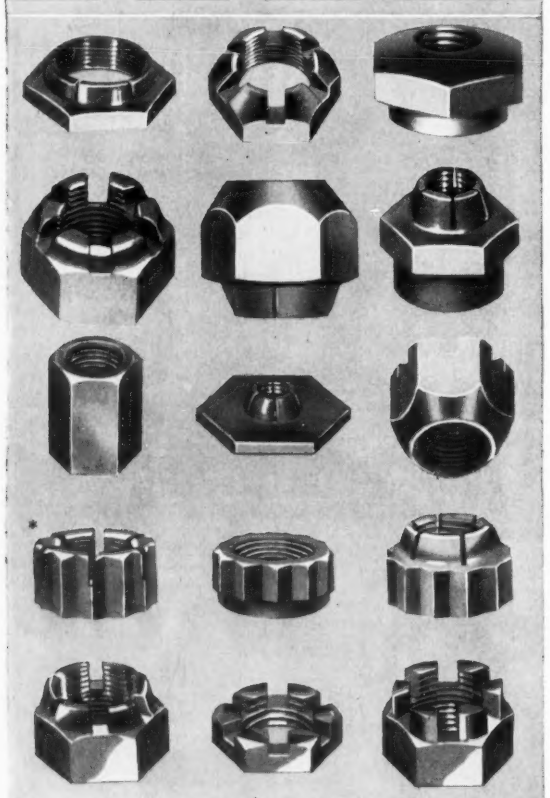
KNU-VISE PRODUCTS LAPEER MANUFACTURING CO.
3062 DAVISON ROAD
LAPEER, MICHIGAN
WESTERN DIV., ART LEWIS PRODUCTION EQUIP. CO. 419 Magnolia Street, Glendale, California
CANADIAN DIV., HIGGINSON EQUIP. SALES LTD. 1131 Pettit Road, Burlington, Ontario

▲ For more details circle NED-586 E8 on enclosed inquiry slip ▲

SPECIAL NUTS

to specs. 7/16"—4¼" cross flats

special machines + large stock of material x years of experience = speedy deliveries high quality low prices



Here are a few samples made to customers specifications . . Our batteries of special high-speed multi-spindle, automatic machines make possible fast and accurate production of hexagon nuts of non-standard height and special shape from carbon or alloy steel, Naval bronze or other non-ferrous metals; also AN 310 through AN 335 as per latest Airforce specifications. Very often the special nut you require may be similar to one we are already making and a simple modification would result in a price advantage and quicker deliveries to you . . Send us your blueprint and particulars —let us quote on your requirements . . We also have a catalog that contains complete specifications, engineering data and prices regarding our standard nuts.

*12 Pointer Standards, sizes: ¼" to ¾"—brochure on request

NATIONAL MACHINE PRODUCTS

*Manufacturer of Standard and Special *12 Pointer and Hexagon Nuts . . . "Huglock" and "Marsden" locknuts.*

44225 Utica Rd., UTICA, Michigan

sps/COMPANY

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BARREL FINISHING MACHINE
media separating system is built-in

Twin-compartment, 5.6-cu ft, neoprene-lined barrel, and built-in screening drawers to handle discharged loads from each compartment are features of the Model DBO-2A barrel finishing machine. Designed for processing small and medium lots, it can simultaneously debur and finish different types of parts. Barrel speeds range from 8 to 38 rpm. Machine handles work loads up to 700 lb and requires less than 12 sq ft of floor area. Made by **Almco, Queen Products, Inc.**, Dept. N, Albert Lea, Minn.

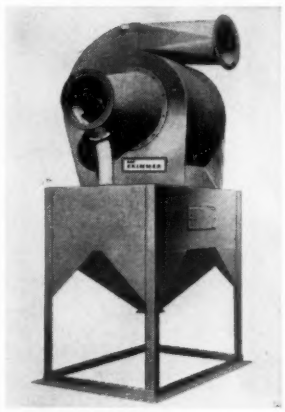
▲ For more details circle NED-588 E8 on enclosed inquiry slip ▲

CONCRETE FASTENERS
kit includes hand chuck and hammer

Four ¼-in. self-drilling Red Head concrete fasteners, a newly developed hand chuck for installing them, and an ordinary claw hammer comprise a kit being offered for $1.85. Fasteners can be driven into the toughest concrete, brick or stone, and then are expanded to become permanent anchors for any standard ¼-in. bolt. Once installed, fasteners will not pull out, rust, or vibrate loose. Additional fasteners are 17 cents each. Offered by **Phillips Drill Co.**, Dept. N, Michigan City, Ind.

▲ For more details circle NED-589 E8 on enclosed inquiry slip ▲

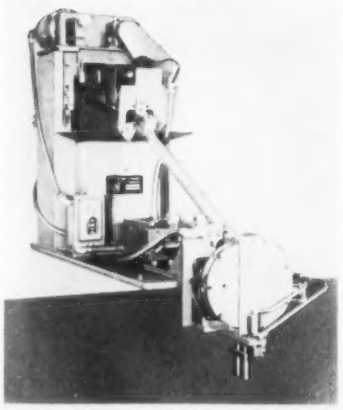
CENTRIFUGAL PRECIPITATOR
used for primary dust collection



Available in 13 sizes capable of handling air volumes ranging from 600 to 40,000 cfm, Skimmer centrifugal precipitators are medium efficiency, low pressure drop units. They can be used as primary dust collectors in pneumatic conveying, as dust collectors to prevent atmospheric pollution, for reduction of dust loading to more efficient final collectors, and for reclamation of the large size fractions of dust in the dry state. Dust is, in effect, skimmed from the air stream by a combination of centrifugal force and slots in the curved wrapper sheet. Made by **American Air Filter Co.**, Dept. PD, 215 Central Ave., Louisville 8, Ky.

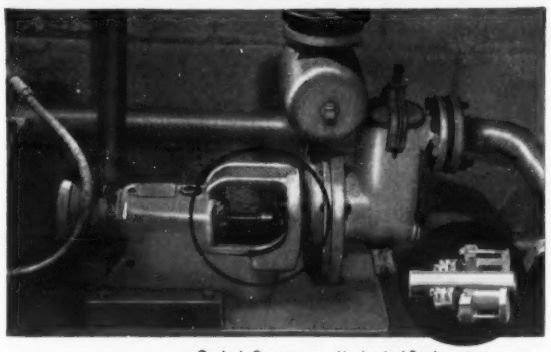
▲ For more details circle NED-590 E8 on enclosed inquiry slip ▲

HOPPER FEEDER
for small metal, nonmetal parts



Self-contained Model 5000 bench type elevating hopper uses a cleated elevating belt which is positioned in a 1½-cu ft hopper. It gently picks up a wide range of small metal or nonmetal parts and deposits them on orienting rolls. Parts are automatically positioned and deposited in a feeding chute at a predetermined feed rate for delivery to the production machine or work station. Only a simple adjustment in chuting is needed to change over from one product to another. Machine can handle rolling forms up to 1-in. diameter by ⅝ in. long; and headed and sliding forms to ½-in. diameter by 1¾ in. long. Made by **Production Feeder Corp.**, 3128 Johnnycake Ridge Rd., Mentor, Ohio.

▲ For more details circle NED-591 E8 on enclosed inquiry slip ▲



Garlock CHEMISEAL Mechanical Seal used on pumps at Continental Oil Co. has TEFLON bellows, a TEFLON-filled carbon sealing face, and ceramic stationary seat.

Sulfuric Acid Sealing Problem licked with less expensive, easy to install GARLOCK MECHANICAL SEAL

In April 1955, Continental Oil Co., Chicago installed a standard Garlock CHEMISEAL* on a centrifugal pump handling 101.6% and 78-80% sulfuric acid for one-fourth the cost of the previous seal. This outside seal was reported easy to install by regular maintenance personnel. The service life is 8 to 10 months compared to 8 days for soft packing.

Now all centrifugal pumps in this service at Continental are equipped with Garlock CHEMISEAL Mechanical Seals. They handle up to 100,000 lbs. per day of sulfuric acid at temperatures to 135° F.

Garlock CHEMISEALS can solve your difficult sealing jobs too. Ask your Garlock representative for his recommendation or write for CHEMISEAL Folder AD-164.

THE GARLOCK PACKING COMPANY, Palmyra, New York

For Prompt Service, contact one of our 30 sales offices and warehouses throughout the U. S. and Canada.

GARLOCK

Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products

▲ For more details circle NED-592 E8 on enclosed inquiry slip ▲

"Get the drop" on every cleaning job with...

COLD STEAM

NEW IMPROVED

HYDRO-AIR $11.45

PRESSURE WASHER

- *BLASTS STUBBORN DIRT!*
- *HARMLESS TO FINEST FINISH!*

CUT COSTS on every cleaning job with HYDRO-AIR! This gun-type unit connects to regular air and hot or cold water supply. Compressed air "breaks" water into minute particles producing a dense penetrating force which blasts heavy dirt or quickly rinses metal sheets and small parts. Extremely economical . . . uses less than 3½ c.f. of air and 3½ gals. of water per minute. Operates with a 1 H.P. compressor. Weighs less than 2 lbs. (Rubber sleeve protects users' hand when hot water is used.)

NEW . . . Non-corrosive Plastiprene valve seat assures positive water cut-off regardless of minerals in water.

ORDER THROUGH YOUR SUPPLIER or write direct. (Inquiries invited from industrial cleaning compounders interested in resale.)

D & M PRODUCTS, INC.
24 N. RAYMOND AVE., PASADENA, CALIF.

Hydro-Air is widely used throughout these industries

Air Craft
Automotive
Bakeries
Breweries
Cement
Ceramics
Cheese
Construction
Distilling
Electrical
Food Processing
Foundries
Jewelry
Leather
Meat Packing
Machine Shops
Marine
Mining Equipment
Oil & Refinery
Optical
Paper
Pharmaceutical
Public Utilities
Repair Services
Railroad
Rubber
Ship Building
Stone Polishing
Textile
Tobacco
Transportation

▲ For more details circle NED-593 E8 on enclosed inquiry slip ▲

Mail Cart!

Put efficiency in your mail operation! This double-deck polished aluminum mail cart by Chesley lets your mail department categorize incoming mail for quick, error-free delivery. Lower basket for out-going mail. Both baskets are removable.

BASKET SIZE—(Upper) 17½x25x11; (Lower) 17½x25x8
FRAME—High Polished Aluminum • BASKETS REMOVABLE
SHIPPING WEIGHT—33 lbs. • PRICE—$45.00 • TERMS 1% 10 days, net 30 days • F.O.B. Detroit.
File folders to fit guide bars — $.24 ea.

Write for free brochure — or, better still — order today!

Chesley Industries, Inc.
24777 Telegraph Road, Detroit 41, Mich.

▲ For more details circle NED-594 E8 on enclosed inquiry slip ▲

▲ For more details circle NED-595 E8 on enclosed inquiry slip ▲

Tool Idea by Standard

New Timesaving Wrench by Snap-on

Standard Oil Company of California needed a wrench to tighten bolts to high tensions . . . eliminate safety hazard of striking wrench with a sledge hammer . . . save time . . . overcome close-quarter limitations.

One of Standard's maintenance foremen conceived the idea of using an air-powered wrench. He outlined his thoughts to *Snap-on* sales engineer, W. F. Egbert. From their combined ideas, Standard built working models using regular *Snap-on* sledge wrenches.

Using these models, *Snap-on* made detailed drawings, then furnished the industry's first cupped-slugging wrenches. This tool answered all requirements outlined above. In actual practice, a strap wrench is used to prevent the wrench from slipping from the nut.

Whatever your tool problems, *Snap-on* can render a specialized service. Branch offices and warehouses are located in key cities throughout the U.S. and Canada.

SNAP-ON TOOLS CORPORATION
8110-E 28th Avenue • Kenosha, Wisconsin

▲ For more details circle NED-596 E8 on enclosed inquiry slip ▲

MIGHTY MIDGETS!

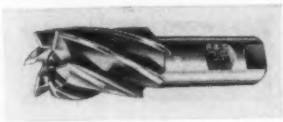
Here's your answer to small traction problems. May be used to operate keyboards, light springs, control board signal flags, and door latches. Conventional design. Wide range of d. c. voltages. Self-lubricating Nylon bobbin. Side leads. Design variations available to meet your specific problems. Write today for 24-page bulletin "Application Notes on dc Solenoids."

CANNON PLUGS

Please refer to Dept. 113
CANNON ELECTRIC COMPANY, 3208 Humboldt St., Los Angeles 31, Calif.
Factories in Los Angeles; Salem, Mass.; Toronto, Canada; London, England. Representatives and distributors in all principal cities. See Your Telephone Yellow Book.

▲ For more details circle NED-597 E8 on enclosed inquiry slip ▲

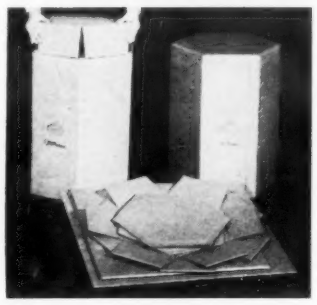
END MILLS
offered in 79 new square-end sizes



Ranging in diameter from ¼ to 2 in., 79 new sizes of square-end end mills supplement over 3200 standard Brown & Sharpe milling cutters. New sizes are available in single, double, long single, and extra-long single end types. Long and extra-long types have longer peripheral cutting with a maximum flute length of 8 in. Long cutting teeth running close to the center provide opportunity for modification. Made by **Brown & Sharpe Mfg. Co.**, Cutting Tool Div., Dept. 43, Providence 1, R. I.

▲ For more details circle NED-598 E8 on enclosed inquiry slip ▲

CORRUGATED DRUM
used without closing equipment

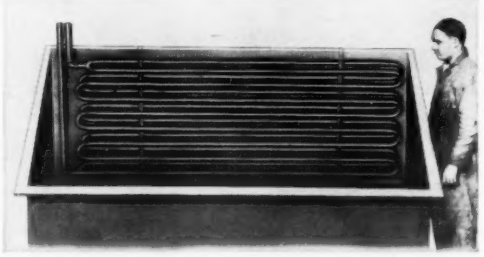


Delivered to the user knocked-down and flat for storage space economy, the Drumpaket corrugated container has top and bottom caps which lock into the body without need for closing equipment, strapping, adhesives, or tape. Their shape enables them to be nested in a car during shipment. A tear tape on the body facilitates opening. Drumpaket is made in various sizes from 2½ to 62-gal capacity. Octagonal, hexagonal, or square shapes are available for packaging free-flowing dry chemicals, fan blades, rubber hose, hardware, and other products. Made by **Gaylord Container Corp.**, 201 Cotton Belt Bldg., St. Louis 2, Mo.

▲ For more details circle NED-599 E8 on enclosed inquiry slip ▲

TUBULAR HEATERS
staggered tubes agitate solutions

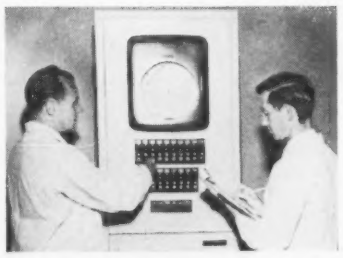
Usable in plating and caustic tanks, and for general fluid heating service, Hi-Therm Grid heaters present large amount of prime heat transfer surface in a cross-



section width of only 2¾ in. Staggered arrangement of tubes reportedly accelerates fluid motion, and concentrated heating surface promotes agitation. Most cases can be served by installing heater on back wall of tank, though it can also be used on any side or on bottom of tank with horizontal or vertical supply and return. It is made of wrought steel pipe, or can be furnished of any metal. Made by **Rempe Co.**, 360 N. Sacramento Blvd., Chicago 12, Ill.

▲ For more details circle NED-600 E8 on enclosed inquiry slip ▲

SUPERVISORY CONTROL
system monitors far-flung operations



Up to 104 channels of control supervision are provided over one transmission circuit by this supervisory control system. It controls and monitors far-flung continuous process operations, such as power and water distribution systems, oil fields, and pipeline systems. Coding and decoding techniques, accomplished by telephone-type relays, enable the system to perform on such transmission mediums as low rental-rate telegraph circuits, higher priced voice-grade circuits, and microwave radio links. Self-checking features are built-in to insure integrity of all transmissions, both at centralized control stations (one of which is shown) and remote stations. The control can be combined with commercially available forms of telemetry. Made by **Applied Science Corp. of Princeton**, Industrial Products Dept., 40 Wallace Rd., Princeton Junction, N. J.

▲ For more details circle NED-601 E8 on enclosed inquiry slip ▲

DEGREASER!
machinery shampoo

SPRAY OR BRUSH ON . . .

Takes cling out of oil and grease . . . emulsifies it . . . so that all dirt may be hosed off. Launders engines, lathes, machinery, faster, more completely than steam cleaning. Self scouring action brings out factory new appearance . . . provides accurate visual inspection. Where work will not withstand the use of water for rinsing, we can recommend suitable GUNK© replacement. (GUNK is also an excellent paint brush cleaner.) Shipped in concentrated form . . . 55 gal. drum makes 500 gals. heavy-duty Degreaser! Genuine GUNK is sold in bulk sizes at better industrial wholesalers everywhere!

THE CURRAN CORPORATION
(Home Office) South Canal St. LAWRENCE, MASSACHUSETTS <-Plants-> GUNK Chicago Company Chicago 38 (Licensee)
IMMEDIATE SHIPMENT
1 PINT OR A TANK CAR

▲ For more details circle NED-602 E8 on enclosed inquiry slip ▲

500% PRODUCTION INCREASE
-PROPORTIONATE COST REDUCTION IN SMALL PARTS MACHINING!

4 MODELS —ONE TO MEET YOUR EXACT NEEDS

THE NEW CLAUSING
SEMI-AUTOMATIC BORING AND TURNING MACHINE

Users report production increases of 200% to 500%, with corresponding cost reduction, and jobs have been held to .0002 tolerance on production runs. Average job change and set-up takes from 15 to 30 minutes. No special jigs or fixtures required . . . simple block tool holders, carbide insert bits and standard boring bars will handle most jobs. Operator merely loads, presses starter button, and unloads finished pieces *seconds later* . . . machining operations are performed automatically . . . simultaneously or in continuous sequence. A time and money saver on short as well as long production runs.
SPECIFICATIONS: 5" x 16" cross slide with 4-11/16" swing, 5" travel; 12" x 14" table with 9" swing, 8" travel. Prices start at $4250 with electricals and hydraulic equipment installed.

Write FOR ILLUSTRATED LITERATURE CLAUSING DIVISION
CLAUSING ATLAS PRESS COMPANY
5-113 N. Pitcher St., Kalamazoo, Mich.

▲ For more details circle NED-603 E8 on enclosed inquiry slip ▲

New Selection and Application Guide for Tubing

offers information on standard analyses, sizes, production limits, applications and service conditions of Superior tubing

This bulletin makes it easy for you to select the Superior tubing you need. Here, in a handy, easy-to-read guide, are applications, advantages and normal production limits—a convenient reference when you are writing specifications.

We produce tubing in over 120 different standard and special analyses—in sizes ranging from .010 to ⅝ in. OD. Certain analyses in light walls are available in sizes up to 2½ in. OD.

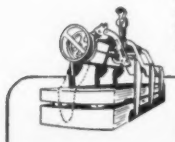
Send coupon for free copy of Bulletin 41

SUPERIOR TUBE COMPANY
2018 Germantown Ave., Norristown, Pa.
Send me a copy of Bulletin 41—"Selection and Application Guide for Superior Tubing"
Name.....Title.....
Company.....
Address.....
.....

▲ For more details circle NED-604 E8 on enclosed inquiry slip ▲

1 man handles Sheet Steel Faster, Easier with a C-F LIFTER

C-F Lifters, under one man operation, pick up, carry and unload more sheet steel tonnage per hour than any other method – and at lower cost per ton. Wide carrying angles hold sheets securely – won't damage high grade sheets; tong action insures safe carrying; fast opening and closing adjustments of Lifter jaws permit shifting from one size pack to another in seconds. C-F Lifters are made in standard or semi-special models to handle from 2 to 60 tons.



Write for Bulletin SL-30 for specific examples of C-F Lifter operation and economy.

CULLEN-FRIESTEDT CO.
1304 South Kilbourn Avenue • Chicago 23, Illinois

For more details circle NED-606 E8 on enclosed inquiry slip

M&M AIR FLUFF PAPER SHREDDER

101

A valuable machine, to you, for the speedy, safe, efficient disposition of blueprints, letters, confidential records. The M & M Air Fluff Paper Shredder is also a money saver to those companies that use quantities of paper excelsior—by converting waste paper into valuable excelsior. Adjustable cuts of 1/8", 3/16", 1/4", or 3/8" widths. Models range in productive capacities from 200 to 2500 pounds per hour. Write for descriptive folder.

MITTS & MERRILL
1000 SO. WATER ST. • SAGINAW, MICHIGAN

For more details circle NED-607 E8 on enclosed inquiry slip

EXTRA EXTRA

BBC

BALANCED BELT CONSTRUCTION

PLUS

New DULON Covers PROLONG BELT LIFE!

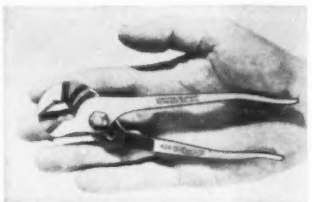
BOSTON'S exclusive Balanced Belt Construction equalizes ply stress . . . each ply carries its full share of the load.

New DULON Covers make BOSTON Belts much more resistant to abrasion, gouging and tearing.

BOSTON BOSTON WOVEN HOSE & RUBBER COMPANY
DIV. OF AMERICAN BILTRITE RUBBER CO., INC.
BOSTON 3, MASS.

For more details circle NED-608 E8 on enclosed inquiry slip

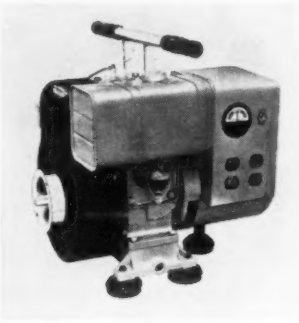
POCKET-SIZE PLIERS
channels prevent slippage



Only 6½ in. long, the thin - jawed Channellock No. 426 multipurpose pliers provides powerful gripping in hard-to-reach places. Interlocking tongue-and - groove channels prevent slippage, regardless of gripping pressure applied. Five adjustments provide jaw capacities up to 7/8 in. in parallel jaw position. Pocket-size tool is drop-forged steel. Made by **Champion DeArment Tool Co.**, Dept. N, Meadville, Pa.

For more details circle NED-609 E8 on enclosed inquiry slip

POWER GENERATORS
ac, dc, and diesel units offered



Line of generators includes alternating-current, direct - current, and diesel - powered electric plants. Generators have built-in rpm meters, triple-dipped mildew and fungusproof windings, automatic spark advance, ball bearings, carrying handles, extra plug - in receptacles, electric starter, and trickle charger. Four-cycle, air-cooled engines, matched to generator capacity, will take reasonable overloads. Made by **Pacific Mercury**, 14052 Burbank Blvd., Van Nuys, Calif.

For more details circle NED-610 E8 on enclosed inquiry slip

TRANSFORMERS
for power and lighting uses

Sound levels are within NEMA standards on this line of three-phase, dry-type power and lighting transformers. Outputs range from 6 to 2000 kva. Standard sizes are available in the 600-v, 5-kv, 8.66-kv, and 15-kv insulation classes. Well-ventilated steel cases protect them externally, and rigid blocking of coils and varnish impregnation of the core and coil withstand internal stresses. Wiring compartments are accessible through removable side panels or covers. All units have floor mounting brackets and smaller units can be wall mounted. Fan cooling, temperature indicator, and a reconnectable star-delta primary are among options offered. They are built to NEMA, AIEE, NEC, and ASA standards. Made by **Hevi-Duty Electric Co.**, Box 563, Milwaukee 1, Wis.

For more details circle NED-611 E8 on enclosed inquiry slip

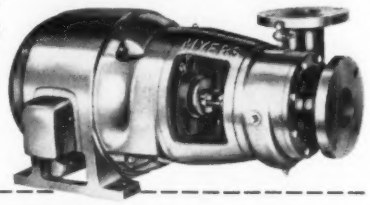
INDUCTANCE METER
measures 0.05 uH to 100 mH values

Suited as production testing instrument, Type M-149 inductance meter directly measures inductance values between 0.05 uH and 100 mH. Provision is also made for measurement of low capacitance and the approximate value of Q at resonance frequency. Instrument facilitates rapid and accurate checking of components whose value must be established within tolerance on a volume basis. Highly stable oscillator can be tuned over range of 16 kc to 5 mc. Resonance is obtained by adjusting oscillator frequency. Tuning dial is calibrated directly in inductance. Resonance point is indicated by Magic-Eye. Made by **Wayne Kerr Instruments**, 2920 N. Fourth St., Philadelphia 33, Pa.

For more details circle NED-612 E8 on enclosed inquiry slip

Hydraulically and dynamically balanced impellers mean longer life for MYERS CENTRIFUGALS

The entire Myers Centrifugal line features a closed-type impeller, hydraulically *as well as* dynamically balanced. Result: a minimum thrust on bearings. Wearing rings can easily be replaced to restore pump to its original operating condition.

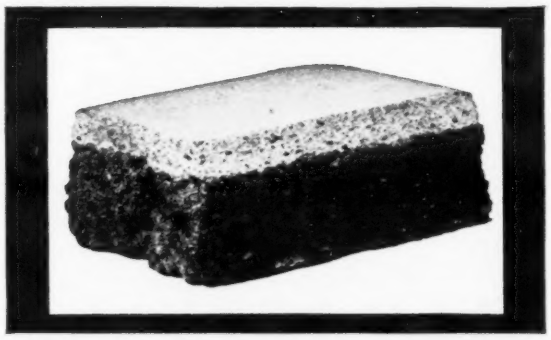


Myers offers a complete Industrial Pump line including motor-mounted, direct-connected and belt-driven models in sizes from 1/3 to 60 H.P.

Myers® PUMPS

THE F. E. MYERS & BRO. CO.
9505 Orange Street, Ashland, Ohio • Kitchener, Canada

For more details circle NED-613 E8 on enclosed inquiry slip



Now! BOND NEW CEMENT TO OLD!

Use new Tropical Cement Bond to *successfully* patch or re-surface broken concrete floors, steps, driveways, shipping docks. Repairs won't crumble, break or flake. Fracture tests show old-new bond undisturbed. Clean, brush on Cement Bond, lay new mix. Save high cost of breaking up old concrete! Withstands heavy traffic. *FREE.* Your letterhead request brings complete information—write today!

75th ANNIVERSARY 1883 - 1958

TROPICAL PAINT COMPANY
1124-1274 W. 70th, Cleveland 2, O.
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883
SUBSIDIARY OF PARKER RUST PROOF COMPANY

For more details circle NED-614 E8 on enclosed inquiry slip

Corrosion-Resistant DRUMS coated with MICCROSOL

55 gallon drum, coated with Miccrosol.....$55 (without handles $50)

30 gallon drum, coated with Miccrosol.....$35 (without handles $30)

5 gallon bucket, coated with Miccrosol.....$5

Prices F.O.B. Detroit Other sizes available upon request

Now you can get full size drums and buckets, coated inside and out with corrosion-resistant Miccrosol.

They're ideal for storing acids, plating solutions, and all types of corrosives. Just right to use when making up plating solutions.

Heavy Miccrosol coating will resist all corrosive action. Securely welded handles are convenient for easier handling. Can also be ordered without handles, if you prefer them that way.

You'll find many uses for these sturdy, corrosive-resistant containers.

MICCRO Products

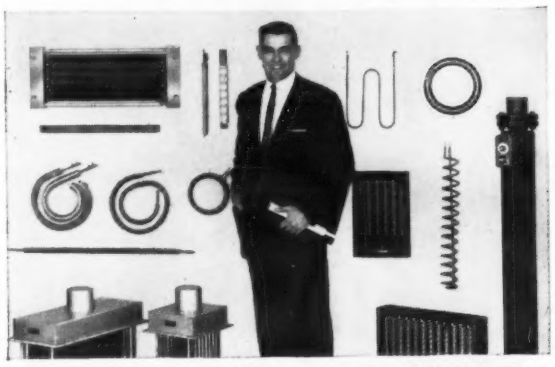
Developed and manufactured by experienced platers and coaters

Order the sizes you need from

MICHIGAN CHROME *and Chemical Company*
275 IRON STREET, DETROIT 14, MICHIGAN

For more details circle NED-615 E8 on enclosed inquiry slip

Process Air Heating?



Your Chromalox Man has the ANSWER

When you need:

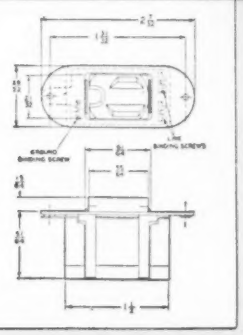
- **clean, moisture-free heat**
- **precisely controlled temperatures**
- **additional heat to supplement existing equipment**
- **safe, explosion-proof heat**

For finish baking, heat-treating ovens, annealing ovens, core and armature drying ovens . . . hundreds of similar applications. Operating temperatures to 1000°F. maintained by thermostat control. Standard units quickly installed in existing ducts . . . multiple circuits can be supplied for modulating heat output. Call your Chromalox representative or write today for details. 2644

CHROMALOX Electric Heat
Edwin L. Wiegand Company
7509 Thomas Blvd. • Pittsburgh 8, Pa.
See ad on page 4

For more details circle NED-616 E8 on enclosed inquiry slip

New



3-Wire Grounding Outlet

FOR APPLIANCES

DEPENDABLE

3 WIRE GROUNDING WITH SCREW TERMINALS

15 Amps 125 Volts

The only one of its kind on the market, this new P&S Despard 3-Wire grounding outlet features a specially designed mounting strap which renders it ideal for use with appliances.

The DS 2001 has parallel slots, double wiping contacts, and a U-shaped grounding contact with a green hexagonal screw for easy identification. It will take all 125 volt, 3-wire grounding caps, as well as standard polarized or non-polarized parallel blade caps.

The introduction of this product represents another P&S first in the industry. For more than 67 years Pass & Seymour, Inc. has been pioneering progress in the field of quality wiring devices. Our experience is at your disposal. Consult us on any problem concerning electrical wiring devices.

P&S® *Mark of Quality*

Write Dept. NED 558 for complete catalog

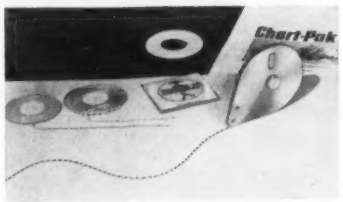
PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
60 E. 42nd St., New York 17, N.Y. 1440 N. Pulaski Rd., Chicago 51, Ill.
In Canada: Renfrew Electric Limited, Renfrew, Ontario

MAKE THE COMPLETE JOB COMPLETELY P&S

For more details circle NED-617 E8 on enclosed inquiry slip

CHART TAPE DISPENSER

1/4-in. tape size now offered

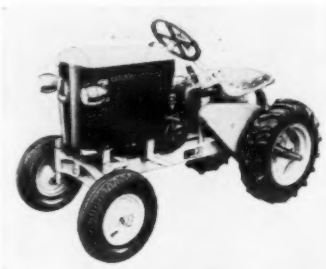


The Tape-Pen metal holder - dispenser (NED, Sept. '57) for applying Curve-Line printed chart - making tape in curved and free-hand designs is now made in the 1/4-in. tape size. New size supplements the 1/8, 1/16, and 1/32 in. sizes previously available. Weighing less than 2 oz, dispenser has three tape-bearing points to assure flat tape application. Device speeds up the making of graphs, plant layout and organization charts, maps, ad layouts, borders, and working drawings. Made by **Chart-Pak, Inc.**, Dept. E, 55 Mulberry St., Leeds, Mass.

For more details circle NED-618 E8 on enclosed inquiry slip

RIDING TRACTORS

line includes 3½ to 9½-hp sizes

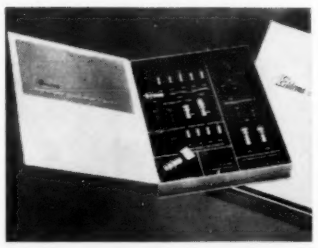


Standard equipment in entire line of small, versatile, Tiger riding tractors is a Borg - Warner transmission which provides three forward speeds and one reverse from 2½ to 15 mph. Tractors range in size from 3½ to 9½ hp and have automatic clutches as standard for smooth starting under heavy loads. Thirty-six grounds maintenance attachments are available for use with the tractors. Made by **Tiger Tractor Corp.**, Keyser, W. Va.

For more details circle NED-619 E8 on enclosed inquiry slip

INDICATOR LIGHT KIT

includes basic indicator types



Sample kit of miniature indicator lights for computer, control, and general applications is designed for desk reference use. Included are samples of both replaceable and permanent lamp indicators in neon and incandescent types, with or without data readout lenses, current-limiting resistors, and special optical features. An incandescent indicator; a transistor circuit indicator with built-in diode-resistor network; and a dual-lamp, positive-check indicator are provided along with a special indicator for computer and data systems. Leather catalog-type binder holds the samples. Offered by **Eldema Corp.**, 1805-A Belcroft Ave., El Monte, Calif.

For more details circle NED-620 E8 on enclosed inquiry slip

MILLERS FALLS TOOLS SINCE 1868

- **Versatile!**
- **Powerful!**
- **Trouble-free!**

½" square drive

New No. 777

IMPACT WRENCH

This new, improved impact wrench out-performs and out-lasts any electric tool in its class. Advanced design features include beryllium copper contacts and terminals, unit thrust bearings, and a new, three-planet gear system. Complete tool weighs only 7¼ lbs., delivers 2,000 impacts per minute, and develops 100 ft. lbs. torque for high-speed nut running, screw driving, and for many other assembly and maintenance operations.

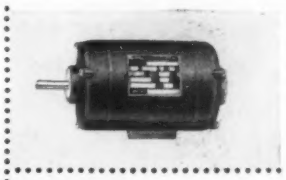
Write for free, fully descriptive folder.

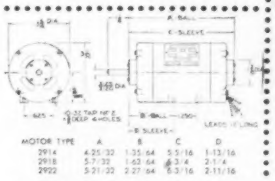
MILLERS FALLS COMPANY
Dept. NED-2, Greenfield, Mass.

For more details circle NED-621 E8 on enclosed inquiry slip

THIS HOWARD INDUCTION MOTOR

Rated 1/100 to 1/15 H. P.





MOTOR TYPE	A	B	C	D
2914	4.25/32	1.35/64	5.3/16	1.13/16
2918	5.7/32	1.43/64	4.3/4	2.1/4
2922	5.21/32	2.27/64	5.3/16	2.11/16

FITS A WIDE RANGE OF APPLICATIONS

Available in several models, Howard 2900 capacitor type motors are used for applications requiring quiet operation, minimum vibration, minimum maintenance, long life and overall uniform performance.

DESCRIPTIONS & APPLICATIONS

(1) Non-Synchronous Capacitor Motors (Types RBC and RWC)—For laboratory equipment, vending machines and general service.
(2) Standard Synchronous Capacitor Motors (Types SBC and SWC)—For tape pulling, sound cameras, telegraph-terminal equipment and other applications requiring a constant speed motor.
(3) Hysteresis Synchronous Capacitor Motors (Types HBC and HWC)—Ideal for recording and facsimile equipment. When equipped with sleeve bearings, these motors are the ultimate in quiet operation and low rumble level. Can be supplied as 2 or 3 speed synchronous motors.
(4) Torque Motors—high resistance rotors (Types RBH and RWH)—For take-up reels and use where high starting loads are encountered. The speed varies with load changes.

Howard 2900 Motors are available as: 1, 2, or 3 phase capacitor; split-phase (synchronous and non-synchronous).
Available with gear heads with a wide range or gear ratios. Write today for complete data.

HOWARD INDUSTRIES, INC., 1740 State St., Racine, Wis.
Divisions: Electric Motor Corp. • Cyclohm Motor Corp. • Racine Electric Products

For more details circle NED-622 E8 on enclosed inquiry slip

How quality Johnson Bearings save money for you

The cost of a single bronze bearing is but a minute fraction of the cost of a shut-down on your production lines due to the failure of a single bearing. That's why smart bearing buyers always order guaranteed quality Johnson cast bronze bearings.

Johnson bearings are cast in Johnson's famous alloy #72, which many millions of machine hours have proved best for general purpose use. More than 900 standard sizes in 200 different ID-OD combinations are available from stock. The ID range is ¼" to 4½"—OD range ⅜" to 5". Lengths range from ⅝" to 9¾". The Johnson Bearing Catalog lists all stock items—gives data on altering to provide oil grooves, slots and holes. Ask your distributor or write Johnson Bronze Company, 580 S. Mill Street, New Castle, Pa.

Johnson Bearings
Subsidiary: Apex Bronze Foundry Co., Oakland, Cal.

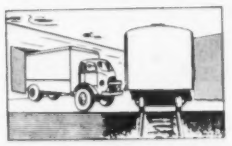
For more details circle NED-623 E8 on enclosed inquiry slip

"#%/*/" . . . open that door! "¢(@-/" . . . close that door!

DAZZO DOCK SHELTER STOPS THE ARGUMENT

saves you money, too—here's how—

Dazzo retractable loading dock-door shelter provides a safe, dry, draft-free passageway between building door and the freight car door or truck.



Think what this means—

No rain damage to merchandise.
No drafts inside the building.
Speedy loading in bad weather.
Fewer accidents, lower insurance.
Better feelings all around.

Dazzo Shelters anchor permanently on the building wall around the door, retract in 10 seconds. Eight different models to fit every door. Every Dazzo shelter is guaranteed. Wire, phone collect or write for literature today.

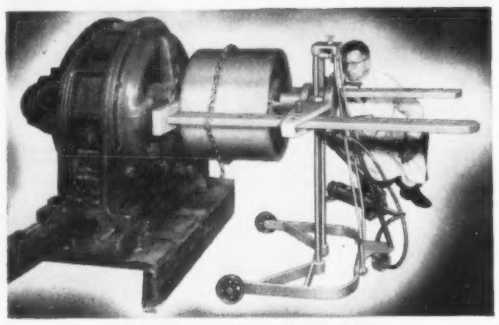
PLANT EXPANSION? Before you build or modernize your shipping facilities, send for a free copy of "Loading Dock Shelters". Contains hints that can make your new Loading Dock a money saver.

DAZZO PRODUCTS INCORPORATED
Dept. D, 152 Bleecker St., N. Y. 12, N. Y. • OR 3-5298

DAZZO PRODUCTS, INC. D5-58
152 Bleecker St., N. Y. 12, N. Y.
FREE CATALOG!
Please send me "Loading Dock Shelters".
Name .....
Company .....
Address .....
City, State .....

For more details circle NED-624 E8 on enclosed inquiry slip

THE QUICK, EASY WAY TO REMOVE AN OBJECT FROM A SHAFT!



This Powerful, Hydraulic

PULLEY PULLER

For Removing Pulleys, Wheels, Gears, Couplings, Sheaves, etc.

One man can do it in minutes — even if objects are stuck fast. No crowbars, sledges, or torches. No damage to equipment. Puller is adjustable — easy to move — rugged. Hundreds being used in industry.

- **5-ton size on wheels** **$122.00**
- **20-ton size on wheels** **$368.00**
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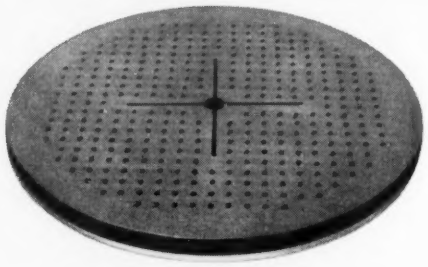
F.O.B. Factory, New Quicklink chain and set of ten ram adaptors at slight additional cost.
Write for complete information · Catalog E

INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

For more details circle NED-632 E8 on enclosed inquiry slip

longer disc life, lower grinding costs



Gardner Abrasive Discs
. . . made to meet your specifications
Send for latest general abrasive catalog.

GARDNER abrasive discs

GARDNER MACHINE COMPANY
462 Gardner St.
Beloit, Wisconsin

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SPACER TUBES
(Sleeves, Bushings, Ferrules)

Save Money on Many Jobs!

Investigate the substantial savings possible with rolled, split steel spacer tubes. They replace costly pipe, tubing or machined parts, eliminate cut-off or de-burring time, come ready for assembly, to your exact dimensions. Now saving money on thousands of applications from cars to phonographs, bicycles to chain hoists!

FREE CATALOG and PRICE LIST

Shows wide range of standard sizes, also special features that can be included. Write for your copy today!

FEDERAL-MOGUL DIV.
Federal-Mogul-Bower Bearings, Inc.
11079 SHOEMAKER, DETROIT 13, MICHIGAN

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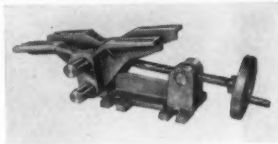
TILTING MOTOR BASE
properly tensions belts



Correct belt tensioning is possible at all times when this low-cost tilting electric motor base is used for 1 to 3-hp drives. When used with variable speed pulleys, it permits easy belt changing on cone step pulleys. Speed control is maintained by a hand screw adjustment. Motor base fits both new and old NEMA frame sizes and can be mounted in any position. Made by **Lovejoy Flexible Coupling Co.**, 4891 W. Lake St., Chicago 44, Ill.

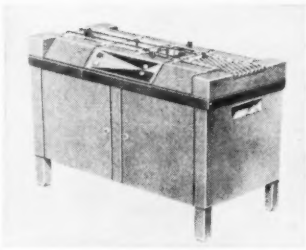
For more details circle NED-635 E8 on enclosed inquiry slip

PHOTOCOPIER
operates under any light

By flicking a switch, this Copease Cameo photocopier will take paper for both normal and bright office lighting. Designed for the small office and for departmental use, the compact, lightproof unit can fit on a typewriter stand or desk corner. It makes black-on-white copies of ink, pencil, or crayon originals up to 8½ in. wide and any length on any kind of paper, colored and opaque, or paper printed on both sides. Slide-out tray allows developer to be changed quickly. Made by **Copease Corp.**, Dept. N, 425 Park Ave., New York 22, N. Y.

For more details circle NED-636 E8 on enclosed inquiry slip

PACKAGE WEIGHT CHECKER
processes 400 packages per minute

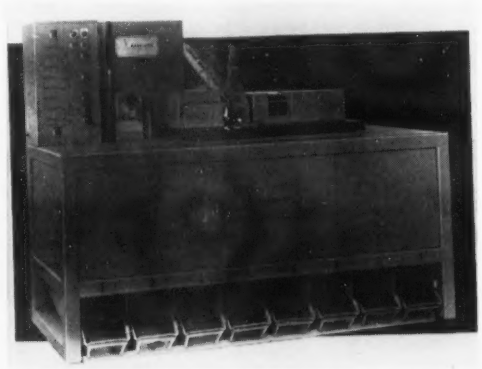


Weight variations within ±1 per cent are sensed in 400 packages per minute by this electronic check weigher. It has tolerance adjustments to overcome too-critical accuracy under certain conditions. Weight discrepancies are detected "on the fly" by the machine which will handle round, conical, rectangular, oblong, or irregular shapes. Sizes range up to 10 in. wide by 10 in. long with no minimum limit. Weight ranges are 1 oz to 1 lb or 8 oz to 3 lb. Unit is adjustable to fit into any in-line conveyor system from 30 to 42 in. high. Several package-segregating variations are offered for the automatic machine. Recording instruments or numerical counters can be supplied. Made by **Food Machinery & Chemical Corp.**, FMC Packaging Machinery Div., 4992 Summerdale Ave., Philadelphia 24, Pa.

For more details circle NED-637 E8 on enclosed inquiry slip

INSPECTION MACHINE
automatically gages, sorts, counts

Gears and nongear parts are automatically gaged, sorted, and counted into eight size categories by this machine which processes 1200 parts per hour. Interchangeable tooling enables it to handle a wide variety of parts. Gaging limits and production speed are easily changed. Machine uses standard electrical and mechanical components and does not require specially trained personnel. Operation is on 110 v ac, 200/250 w, and 70 psi air. Made by **Garrison Machine Works, Inc.**, 535 Bannock St., Dayton 4, Ohio.



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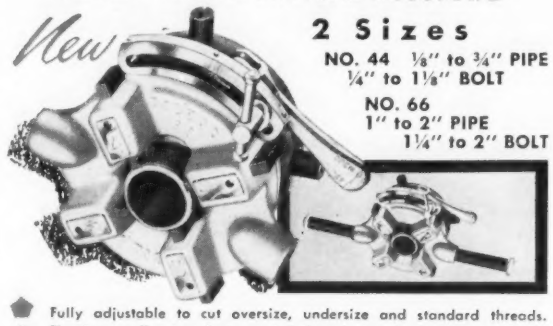
TOLEDO CAM-TYPE DIE HEAD
FASTER...EASIER...MORE ACCURATE



2 Sizes
NO. 44 ⅛" to ¾" PIPE
¼" to 1⅛" BOLT
NO. 66
1" to 2" PIPE
1¼" to 2" BOLT

- Fully adjustable to cut oversize, undersize and standard threads.
- Floating scroll acts only to control thread size. Back plate and body bolted securely together-assuring maximum bearing surface for chasers.
- Elongated jaws in centering device grip pipe securely—prevent die head from dropping on completed thread when dies are moved to open position.
- Easy-to-read size gauge . . . even through oil film. Bolt threads in all sizes set to same mark.
- Dies can be instantly released from completed thread—no slow backing off.
- Optional pipe centering device insures accurate threading. Can be quickly removed if desired.

For faster, easier and more accurate threading, see the TOLEDO No. 44 or No. 66 at your supply house now.

Quality Checked

THE TOLEDO PIPE THREADING MACHINE COMPANY
TOLEDO 4, OHIO

BUILDERS OF THE WORLD'S FINEST PIPE TOOLS
TOLEDO
PIPE THREADERS • PIPE WRENCHES • PIPE MACHINES

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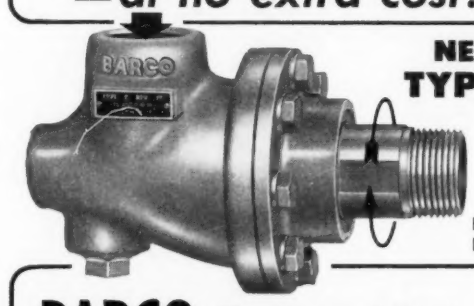
"SUPER" Performance —at no extra cost!



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Patent Pending

BARCO Rotary Joint

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"CRACK-FREE" CHROME PLATED SLEEVE—A standard Barco feature. Minimizes corrosion, friction, wear. Stainless steel spring also standard.

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WIDE SPACED BEARINGS—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.

200 P. S. I. STEAM RATING—Heavy duty service at *no extra cost.* Eight sizes, ½" to 3". *Send for new Catalog 310 today.* **BARCO MANUFACTURING CO., 530F Hough Street, Barrington, Illinois.**

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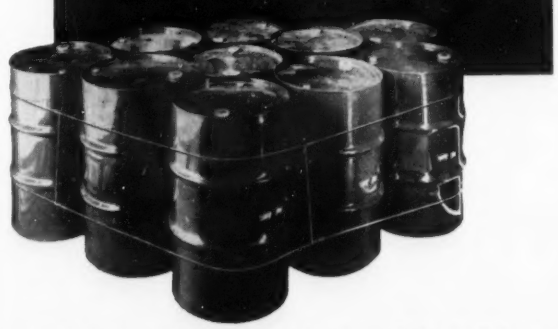

The USS GERRARD* Steel Strapping around these oil drums means they'll *stay put* during carload shipment. With USS* GERRARD Steel Strapping, you can get the same kind of solid reinforcement, no matter what your packaging requirements. For the complete story, just write for a copy of our 36-page Blue Book of Packaging. Gerrard Steel Strapping, 4717 South Richmond Street, Chicago 32, Ill.

Gerrard Steel Strapping Dept.
U. S. Steel Supply Division of United States Steel

USS *TRADEMARK

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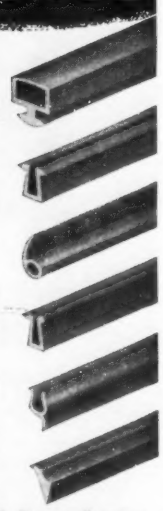
EXTRUSIONS

TO YOUR
SPECIFICATIONS
By CONNEAUT



If you need production of extruded plastic shapes, or special plastic compounding to meet unusual product specifications, write, wire or phone Conneaut. We have the experience and facilities to meet your requirements for either or both efficiently, rapidly and economically. At no obligation we'll quote from your prints and specifications, or analyze your problem and make recommendations.

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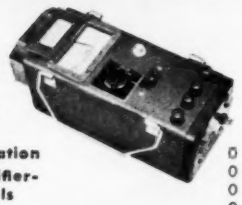
New
MEGGER® LOW RESISTANCE OHMMETER



- **Completely Self-Contained**
- **Convenient, One-Man Operation**
- **Battery or Rectifier-Operated Models**
- **Ideal for Field or Bench Use**

RANGES
0 to 1,000 microhms
0 to 10,000 microhms
0 to 100,000 microhms
0 to 1 ohm

FEATURES

1. Measures accurately down to 10 microhms
2. Open, easy-to-read, 3¼" scale
3. 4 ranges: In addition to the x1 position on the selector switch it multiplies scale x10, x100 and x1000
4. Small size—13" x 6" x 7"
5. Light weight—only 10 pounds
6. Sturdy carrying case keeps instrument, leads and prods in one place, ready for use.

NEW CLAMP DESIGN ON TEST LEADS
Special clamp type test leads 18 feet long are available on special order. The extra length facilitates tests in elevated or remote locations without moving the instrument close by. Especially important in testing large circuit breakers. Clamps are of duplex type, each makes current and potential connection when applied. This permits one man to make tests.

WRITE FOR BULLETIN 24-46-D 8-603

JAMES G. BIDDLE CO.
Electrical & Scientific Instruments
1316 ARCH STREET, PHILADELPHIA 7, PA

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FOR HIGH QUALITY AND EASY INSTALLATION IN LIMITED SPACE
USE McGILL® *Levolier*® SWITCHES

Cut installation time and end frequent switch replacement with these Levolier switches for lighting and FHP motor control where space is limited.

No. 41—UNCONDITIONALLY GUARANTEED—Levolier Model 41 6 amp. "T" rated 125 volt switch is unconditionally guaranteed when used in lighting circuits. It is extremely compact—⅝" x 1⅜". Molded phenolic case.

No. 71—the thinnest 6 amp. "T" rated switch only 15/32" thick, 6 amp., "T" 125 volt; 3 amp., 250 volt. Pressure connected 6" leads for fast, easy installation. Phenolic case.

Available from Electrical Wholesalers

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ELECTRICAL SPECIALTIES

are always a little better and **ALL** *are Underwriters' Laboratories inspected*

McGILL MANUFACTURING CO., INC. 151 N. Campbell St. Valparaiso, Indiana

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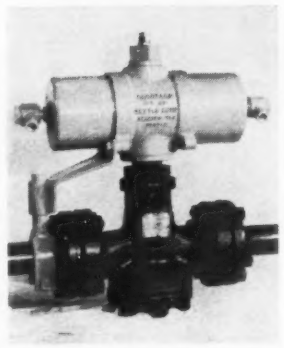
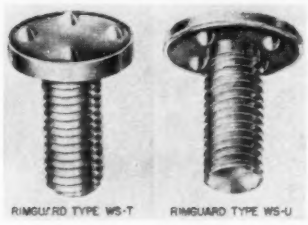
PLUG VALVE ACTUATOR
operated by gas or fluid pressure



Plug valves and other 90-degree rotating mechanisms can be operated by the Robotarm actuator which functions on gas or fluid pressure. It incorporates a totally-enclosed piston rack and gear assembly, fully submerged in an oil bath. Field installation to any standard wrench - operated valve can be made in a few minutes. Adaptations to gear-head valves are possible, also. Standard models generate from 3000 to 25,000 lb-in. torque with 100-psi operating pressure. Accessories include pneumatic or solenoid-operated pilot valves. Fail safe assembly kit (optional) enables the valve to close or open automatically upon loss of operating pressure. Made by **Bettis Corp.**, Dept. NE, 6504 Rusk Ave., Houston 11, Tex.

▲ For more details circle **NED-645 E8** on enclosed inquiry slip ▲

PROJECTION-WELD SCREW
rim limits the applied pressure



Rimguard weld screw for projection - welded assemblies has a protective rim around the screw head periphery, plus four weld projections. The rim limits the amount of pressure that can be applied to the projections during the fusing stage. Thus, the weld metal is properly diffused and confined, and spatter and flash are minimized. The low-carbon steel fastener is available with projections on the top or on the underside of the head. Screws are threaded to ASA Class 2A standard and are offered in diameters from No. 6-32 to ⅜-in.-16 in lengths from ¼ to 2 in. Free samples are available from the manufacturer, **General American Transportation Corp.**, Parker-Kalon Div., 2 Peekay Dr., Clifton, N. J.

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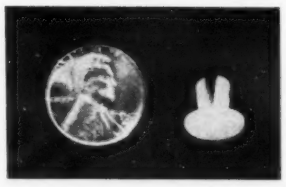
DRAWER GLIDE
made of self-lubricating plastic



Completely silent, tough, and shock absorbent, this No. 90-60-5 molded drawer glide is easy to install. It fits in a 3/16-in. hole in any gage material. Smaller than a penny in size, it costs less than 1 cent. Simple adjustment allows glide to be elevated. It can be used in metal or wooden furniture or equipment. Made by **Reiss Mfg. Corp.**, RWAY Industrial Products Div., Dept. Q, 1130 Maryland Ave., Sheboygan, Wis.

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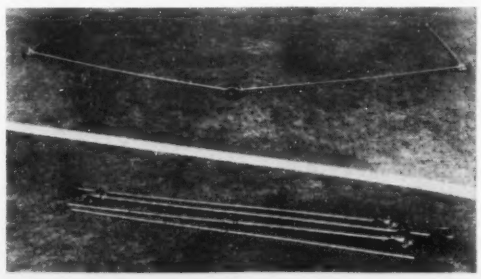
LAWN SPRINKLING SYSTEM
in 20, 40, or 60-ft lengths

Industrial and commercial building lawn areas too large for watering with conventional single sprinklers can be adequately maintained with this Wheel-Trac



system. It is offered in 20, 40, or 60-ft lengths made up of two, four, or six 10-ft sections of aluminum pipe, respectively. Rubber-wheeled swivel and end dollies on which system rolls hold the sprinkler heads. Rubber seals prevent leakage in pipe-dolly connections. Swivel dollies allow 45-degree angle at each connection, to position pipes for watering odd-shaped areas. System operates on water pressure as low as 5 psi. A 60-ft system can cover up to 2700 sq ft. Made by **Hiller Engineering Corp.**, Dept. N, 64 McClellan St., San Jose, Calif.

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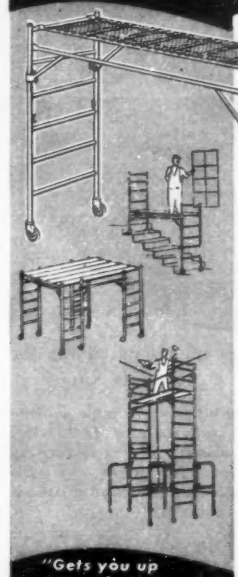
BIL-JAX ALL PURPOSE SCAFFOLD



Unit easily erected by one man . . . can be rolled thru standard doorways . . . straddles desks, files, counters, machines . . . can ride freight elevators . . . all without dismantling. Work surface is no-slip expanded metal.

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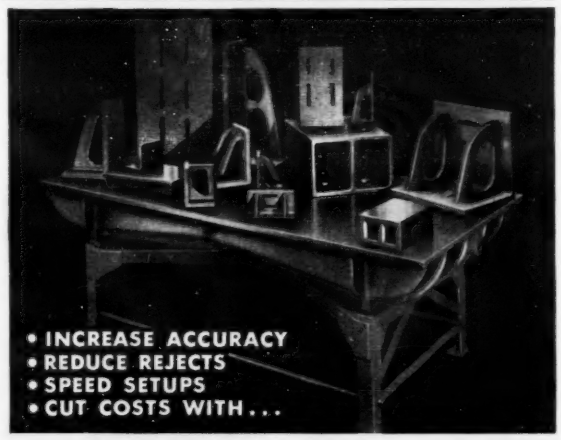

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• SPEED SETUPS
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You'll hold closer tolerances and increase efficiency, too, when you use Machine Products precision surfaces. Because the combination of superior materials, skilled craftsmanship and rigid quality controls in the manufacture of Machine Products equipment assures you of the precise dimensional accuracies you require. A complete line of plates and accessories is available, so send for your free catalog today.

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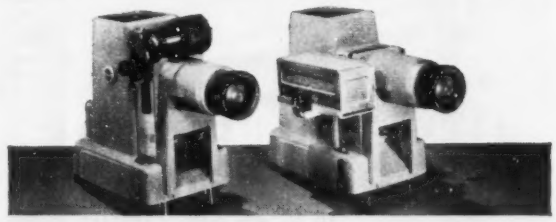
KODASLIDE SIGNET PROJECTORS
have precision movements, handy controls, extra brightness, to help you show your slides and filmstrips with full effectiveness.



Slides and filmstrips work their *hardest* with these easy-to-use, versatile projectors

Make your slides and filmstrips work to full effect—show them with a Kodaslide Signet Projector.

Frames advance smoothly, and fast as a flick—even with cut or damaged film—thanks to the new, enclosed, nylon-geared Geneva mechanism. Sprocket teeth are visible for fast threading. Rapid rewind device.

Convenient controls let you concentrate comfortably on your *presentation*—not your projector. Special lenses and reflectors help deliver brilliant, sparkling pictures. Impeller-type blowers, aluminum panels, thick heat-absorbing glass assure cool, quiet performance. And you can convert from filmstrips to slides—and back—in seconds!

The 500-watt output of the Signet assures brilliant screenings on both slides and filmstrips, as desired.

Get full details—write for free pamphlet

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

Kodak

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AMEs

have hardened and burnished pivots for higher sensitivity . . . lower friction

Because metal pivots are stronger than jeweled pivots, Ames has devised a way of hardening and burnishing them to match the sensitivity of jeweled types. The result is a dial indicator that is unsurpassed for accuracy and strength. And it costs *less* than jeweled types. This "funtional" approach is just one more reason why Ames Dial Indicators are so often specified as "preferred". Write today for complete information.

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MANUFACTURERS OF MICROMETER DIAL GAUGES • MICROMETER DIAL INDICATORS

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Save time and money—buy HALLOWELL steel collars

43 stock sizes from 1/8 to 3 in. bore

Choice of knurled cup point or Nylok* self-locking set screws

Standard HALLOWELL solid steel collars are now available with two types of socket set screws: UNBRAKO self-locking knurled cup point or, where locking action is required with a plain cup or flat point or against extra hard shafts, UNBRAKO socket set screws with the Nylok self-locking feature. All collars size marked. Also solid and split cast iron collars in bore sizes up to 4 15/16 in. See your HALLOWELL distributor or write for Bulletin 868. Hallowell Collar Division, STANDARD PRESSED STEEL Co., Jenkintown 24, Pa.

*T.M. Reg. U.S. Pat. Off., The Nylok Corporation

sps Jenkintown • Pennsylvania

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co. • National Machine Products Co. • Nutt-Shel Co. • SPS Western • Standco Canada Ltd. • Unbrako Socket Screw Co., Ltd.

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FULL REVOLVING . . . MANUAL OR POWER ROTATION

LETOURNEAU JIB CRANES, from 3 to 15 tons, provide precise materials handling indoors or out. The 25-ft. boom serves 1926 sq. ft. of floor or ground area, swings in a full 360-degree circle, handles full capacity at any point within its full length. Available with manual or power rotation pillar or base mounted. All-welded steel construction assures strength and safety.

Write for literature today to R. G. LeTourneau, Inc., Industrial Equipment Division, 2565 South MacArthur, Longview, Texas.

R. G. LETOURNEAU INC
LONGVIEW, TEXAS

F-122

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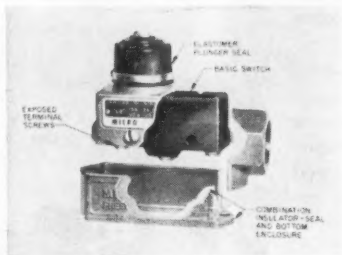
GENERAL-PURPOSE SWITCHES improved enclosure aids connection



Improved design of Type E general-purpose enclosed limit switches features a compact enclosure that separates into two halves for easy connection of terminals. Also, a one-piece molded neoprene insulator seal is cemented permanently into bottom half of enclosure for better sealing and insulating qualities. Enclosure is available in five different integral actuator designs and in side or bottom-mounted types. Standard units have single-pole double-throw contact arrangement and are UL-rated at 15 amp, 125, 250, or 460 v ac; 1/2 amp at 125 v dc; and 1/4 amp at 250 v dc. Made by **Minneapolis-Honeywell Regulator Co.**, Micro Switch Div., 205 S. Chicago Ave., Freeport, Ill.

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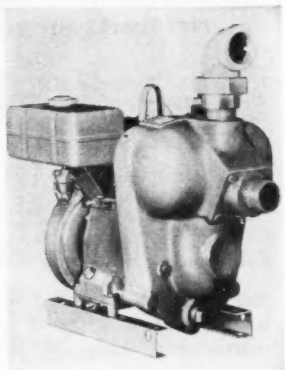
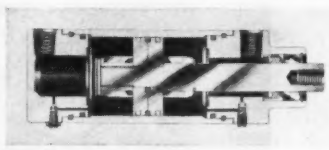
CENTRIFUGAL PUMPS in deliveries from 27 to 170 gpm



Recirculation port design of line of self-priming centrifugal pumps allows rapid priming and renewal of internal clearance. Pumps are made in 1 1/2 to 8 in. suction and discharge sizes. At 3200 rpm, Model 1 1/2 PE-4 will deliver from 75 to 27 gpm at heads from 15 to 55 ft. Models 2-PE-7 and 2 PE-10, operating at 2600 rpm, have respective deliveries of 122 to 58 gpm and 170 to 78 gpm at heads of 25 to 7 ft and 25 to 80 ft. Gasoline engine driven; close-coupled, monobloc motor driven; and conventionally coupled motor driven units are available. Made by **Worthington Corp.**, 427 Worthington Ave., Harrison, N. J.

▲ For more details circle **NED-656 E8** on enclosed inquiry slip ▲

AIR & HYDRAULIC CYLINDERS withstand −20 to 500° F temperature



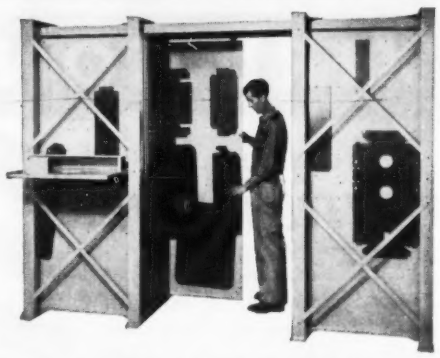
Capable of operating at continuous elevated temperatures, line of standard air and hydraulic cylinders is usable for power purposes in ovens, furnaces, glass machines, die casting operations, and process equipment. Silicone greases, spring-loaded packings, and design adapt them for −20 to 500° F service. Ratings are up to 150 psi for air and 350 psi on hydraulic duty. Bores range from 1 1/2 to 8 in., with stroke lengths to 18 ft. Cushioned and noncushioned models are available in wide range of mounting styles. Made by **Carter Controls, Inc.**, 2876 Bernice Rd., Lansing, Ill.

▲ For more details circle **NED-657 E8** on enclosed inquiry slip ▲

ONE-STEP PHOTOCOPIER speeds up copy making operations

Sharp black-on-white copies of any printed, typed, written, photographed, or drawn original are made in one-third the usual time by this Apeco Unimatic Auto-Stat office photocopier. The one-step synchronized operation requires that original and photocopy paper be inserted only once. After paper has been exposed to light source, original is returned while photocopy paper is developed. The pushbutton-controlled machine operates on 110-v ac weighs 34 lb, and measures 21 x 13 1/2 x 7 in. Working parts are stainless steel, and housing is Melamine. Made by **American Photocopy Equipment Co.**, Dept. NED, Evanston, Ill.

▲ For more details circle **NED-658 E8** on enclosed inquiry slip ▲



Nearly 3,000 sq. ft. of steel filing space in 25 sq. ft. of floor space with

DELUXE **TEMPLA-FILE**
(patent pending)

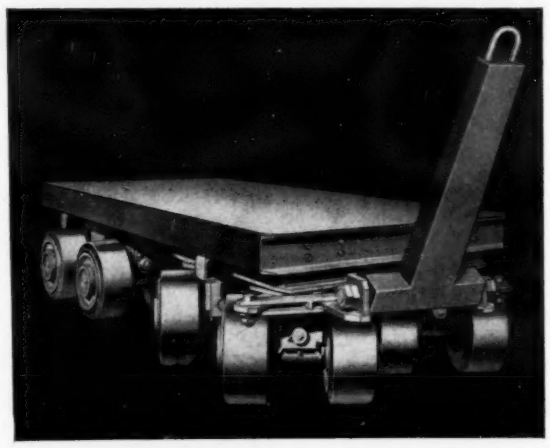
New practical system for vertical filing and storing of templates, patterns, gaskets, and mock-ups.

- Eliminates wasted man-hours locating patterns
- Saves floor space
- Foldaway reference desk holds handy card index file.
- 24 free-sliding panels—each support 600 lbs.
- One Templa-File user states he saved 75% of the time previously used in locating templates.

Call your Deluxe dealer or write for Bulletin #100

DELUXE — DELUXE METAL FURNITURE CO., Warren 2, Pa. A Division of the Royal Metal Mfg. Co.

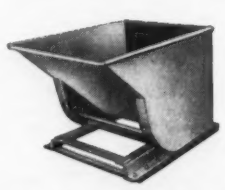
▲ For more details circle **NED-659 E8** on enclosed inquiry slip ▲



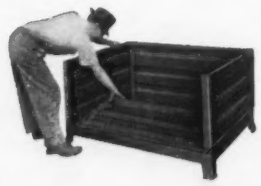
Ruggedly built for tough in-plant loads

Salem-Brosius' Phillips-designed heavy-duty trailers are built to take a beating. They are designed to safely and economically haul forgings, castings, ingots, slabs, plate, coils and other products requiring in-plant handling.

Designed in load-handling capacities from 6000 to 600,000 lbs, Phillips trailers feature front and rear axle fifth wheels for better steering, articulated axles, Timken wheel bearings, solid or pneumatic tires, and 4, 8, or 16-wheel models. They may be used singly or in trains. Write for further information.



Ask about rugged Phil-Dumps. They dump automatically, stack, and handle easily with lift truck.



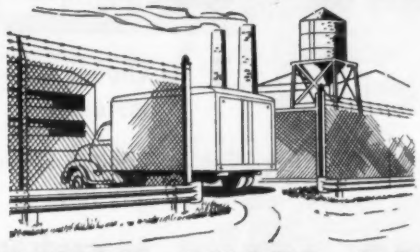
Phil-Boxes are excellent for carrying and storing heavy materials. They stack and easily collapse.

SALEM-BROSIUS, INC.
16 Arch Street • Carnegie, Pa.

PHILLIPS MATERIALS-HANDLING EQUIPMENT

▲ For more details circle **NED-660 E8** on enclosed inquiry slip ▲

STOP CARELESS DAMAGE TO VALUABLE FENCING



ANCHOR GUARD RAIL

High impact resistance combined with neat, compact design make Anchor Guard Rail the ideal way to protect fences, building corners, pipes, transformers and other expensive property. Anchor Guard Rail is erected by Anchor's own men; every job is backed by Anchor's 66 year reputation. Call your local Anchor office today for a free estimate, or write: ANCHOR FENCE, 7005 Eastern Avenue, Balimore 24, Maryland.

Anchor Fence®

Division of ANCHOR POST PRODUCTS, Inc.

Plants in: Baltimore, Md.; Houston, Texas; and Whittier, California.
Sold direct from Factory Branches and Warehouses in all principal cities.

▲ For more details circle NED-661 E8 on enclosed inquiry slip ▲

The Louis Allis IMMERSIBLE MOTOR

Here's the *first* electric motor designed for continuous operation immersed in a liquid! Works in vat or sump — or at the bottom of a pool, lake, or ocean. You save the cost of shafting and bearings required by conventional surface-mounted motors.

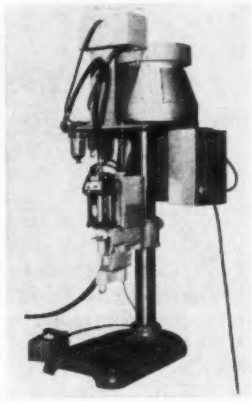
The new Louis Allis immersible motor is completely leak-tight . . . will operate in fresh or salt water, sewage, chemicals, abrasive cutting oils, etc. It's ideal for vertical or horizontal mounting on pumps, agitators, mixers, and special equipment. ¾ to 40 hp. Send for Bulletin No. 2300. The Louis Allis Co., 436 E. Stewart St., Milwaukee 1, Wis.

SM-110

LOUIS ALLIS

▲ For more details circle NED-662 E8 on enclosed inquiry slip ▲

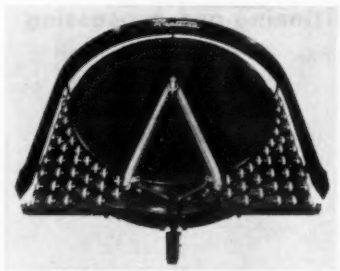
THREADED INSERT ASSEMBLER fits into production assembly line



Fast production with minimum of labor is provided by this assembly machine for installing and anchoring Dodge Expansion threaded inserts into drilled or molded holes. It consists of a vibratory feed hopper, orienting unit, and an air cylinder. It operates at 72 inserts per minute on a single-punch machine. It can be tooled to install up to six inserts at one time. This automation combination can be incorporated in existing set-ups. Made by **Phelps Mfg. Co.**, Box 542, Westport, Conn.

▲ For more details circle NED-664 E8 on enclosed inquiry slip ▲

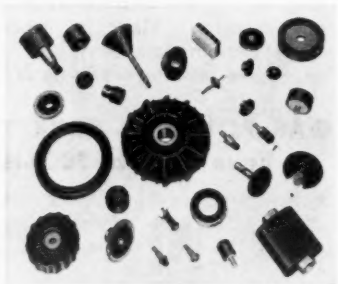
CONVEYOR LINE TURNTABLE transfers at angles to 180 degrees



A flat, smooth surface is provided by this improved power turntable for transfer of goods between adjoining conveyors. Quiet efficient drive carries goods around any segment up to 180 degrees. Outside guard rails and inside adjustable guard rails guide products. Available diameters are 4, 5, and 6 ft, and telescoping legs adjust height from 24 to 39 in. Made by **Rapids-Standard Co.**, Dept. NED, 342 Rapistan Bldg., Grand Rapids 2, Mich.

▲ For more details circle NED-665 E8 on enclosed inquiry slip ▲

RUBBER-TO-METAL BONDING parts meet exact tolerances



Natural, synthetic, and silicone rubber elements are bonded to various metals as well as to plastics, including nylon, by the Gorbond process. This process is flexible enough to meet exacting tolerances and critical performance and material demands. It allows rubber bonding to metal inserts and other customer items. For more information write **Goshen Rubber Co.**, Dept. NED-1, Goshen, Ind.

▲ For more details circle NED-666 E8 on enclosed inquiry slip ▲

EDMONT CASE NO. 438: For grinding, buffing and polishing operations, heavy fabric gauntlets wore 4½ shifts. Edmont rough-surfaced, natural rubber coated glove (Grab-it No. 62W) wore 12½ shifts, reduced glove costs 41%.

Job-fitted glove cut costs 41%

No. 62W
Palm-coated safety cuff

In case above, the Edmont glove reduced costs because it fit the job. Grab-it gloves are also safer. They are highly resistant to cutting and abrasion, and their rough finish gives a tight, non-slip grip, wet or dry. Grab-its are designed to replace leather and canvas gloves on most jobs.

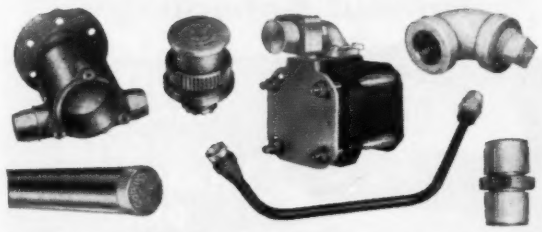
Free Test Offer to Listed Firms: Tell us your operation, materials handled, temperature condition. From more than 50 types we will recommend the Edmont glove that best fits your job and send samples for on-the-job testing.

Edmont JOB-FITTED GLOVES

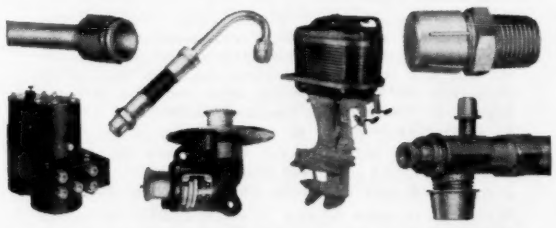
Edmont Manufacturing Company
1240 Walnut Street, Coshocton, Ohio
In Canada write MSA, Toronto

▲ For more details circle NED-667 E8 on enclosed inquiry slip ▲

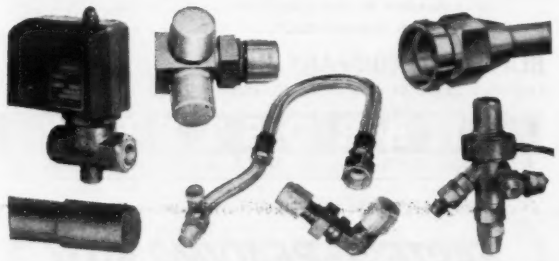
Caplugs protect nearly everything . . . in process, storage and



transit . . . prevent damage to threads and delicate parts . . .



keep out dirt and moisture . . . made of tough, flexible



polyethylene . . . won't chip, break, shred or collapse

Caplugs *10 standardized styles over 500 sizes in stock*

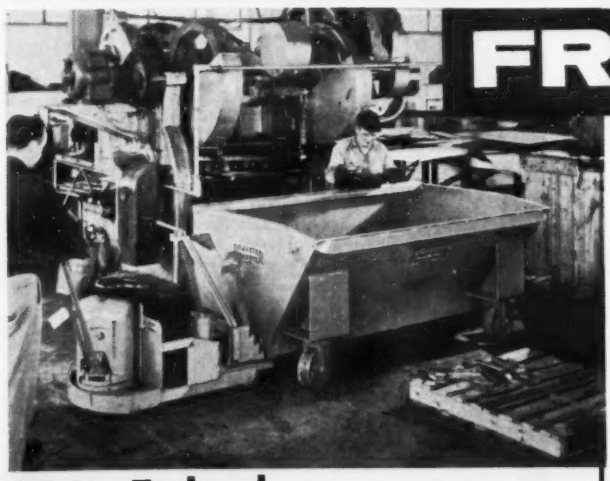
get a free handful of Caplugs in exchange for the attached coupon

CAPLUGS DIVISION, PROTECTIVE CLOSURES CO., INC.
2209 Elmwood Avenue, Buffalo 23, N. Y.

MAIL a free assortment of Caplugs, literature and prices to us, without obligation.

NAME _____ TITLE _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

▲ For more details circle NED-668 E8 on enclosed inquiry slip ▲



FREE BOOK

Shows You HOW TO CUT INDUSTRIAL WASTE DISPOSAL COSTS

Here's one of the most comprehensive books ever published on the subject of industrial waste disposal. You'll find its pages packed with money-saving information . . . discussions and comparisons of equipment and methods. Among the many subjects covered are:

HOW TO DETERMINE YOUR COSTS . . .
An explanation of a simple, step-by-step cost-finding survey you can conduct in your own plant.

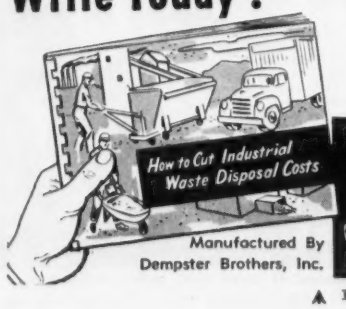
INDUSTRY AVERAGES . . .
For comparison with your costs, there is a table of average per-cubic-yard costs by types of industry.

CASE HISTORIES . . .
Actual dollar and cents savings effected by six companies and how they did it. Also included in the book are many helpful hints on movement, storage, handling and eventual disposal.

DEMPSTER BROTHERS, Dept. NE-5
Knoxville 17, Tenn.

Write Today!

Photo above shows Dempster-Dumpster Container on casters stationed at a point of waste accumulation.



Manufactured By Dempster Brothers, Inc.

THE DEMPSTER DUMPSTER SYSTEM

▲ For more details circle NED-663 E8 on enclosed inquiry slip ▲

LIFT MORE FOR LESS

...with RUGER

MULTI-PURPOSE CRANES

CAPACITIES 1/4 to 3 TONS

PRICED AS LOW AS $149.00 TM 1/4

Ruger mobile hydraulic cranes reach in-under-over for versatile lifting power where and when you need it. They enable one man to lift and move anything that will hang on a hook. Manual and electric models: floor . . . truck . . . convertible floor and truck . . . short mast . . . high mast . . . wide base . . . adjustable legs and retractable outrigger for side lifting. To lift more for less, get the facts today.

THE CRANE WITH 1000 USES RUGER

N-610-RE

RUGER EQUIPMENT, INC.
619 WEST FOURTH ST. • UHRICHSVILLE, OHIO

For more details circle NED-669 E8 on enclosed inquiry slip

Drill Hardened Steels without Annealing—

USE The New IMPROVED "HARDSTEEL" DRILL

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1380 East 222nd St. • Cleveland 17, Ohio

"HARDSTEEL"

For more details circle NED-670 E8 on enclosed inquiry slip

FASTEST-READING DIALS EVER DEVELOPED!

BORG

DIRECT-READING MICRODIALS

- EASIER TO INSTALL
- EASIER TO SET
- EASIER TO READ

MODEL 1307

MODEL 1305

Human engineering studies prove greater accuracy and speed of reading with digital dials. Take advantage of this fact with direct-reading Borg Microdials. Reduce reading and setting errors in your operations! Large, clear numbers are easily read through curved, one piece window. Specify direct-reading Borg Microdials. Available in 3, 4, and 5 digit models.

WRITE FOR COMPLETE DATA

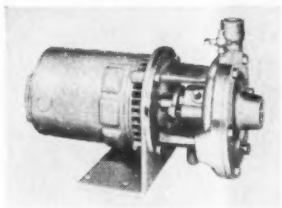
BORG EQUIPMENT DIVISION
THE GEORGE W. BORG CORPORATION
JANESVILLE, WISCONSIN

Built by Borg

MOTORS MICROPOTS MICRODIALS

For more details circle NED-671 E8 on enclosed inquiry slip

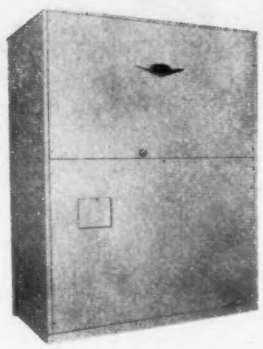
STAINLESS STEEL PUMP
centrifugal type has 100-ft head



Many applications in chemical handling service can be accommodated by this Type 316 stainless steel centrifugal pump, equipped with a closed impeller and cast with a 3/16-in. internal passage. A one-piece sleeve and impeller eliminate shaft wear and corrosion attack. Pump has a corrosion-drip basin as an integral part of the casing and an alloy splash plate covering and protecting the motor or pedestal. This model in the 3500-rpm series has a 1-in. suction inlet and 3/4-in. discharge, low capacity, and a moderately high head of 100 ft. This and other sizes in series are offered in Ampco metal, Illium G high nickel-chromium alloy, and Type 316 Stainless steel. Made by **Ampco Metal, Inc.**, Dept. 5-58, 1745 S. 38th St., Milwaukee 46, Wis.

For more details circle NED-672 E8 on enclosed inquiry slip

LIQUID CHILLERS
for air conditioning and processing



Installation of cleanable ACI-AA packaged liquid chillers requires only connecting to water and electrical outlets. The five 3 to 15-hp units can be installed indoors or outdoors for various air conditioning uses, or to provide chilled water or process fluids for applications where use of water for condensing is not practical. System is preset and regulated at the factory for automatic operation. Straight-through water passes of heavy admiralty metal tubing allow up to 1.2 parts salt content without damage. Passes are easily cleaned of accumulated solid formations and foreign matter. Air-cooled condenser has aluminum fin tubes for rapid heat transfer. Made by **American Coils Co.**, Dept. NED, Farmingdale, N. J.

For more details circle NED-673 E8 on enclosed inquiry slip

GAS POWERED FORK TRUCKS
have 1500 to 3000-lb capacities

Line of three-wheel, gasoline engine powered, industrial fork trucks includes five models with capacities from 1500 to 3000 lb. Feature is the Wear-proof clutch which incorporates a 3-to-1 gear reduction between the engine and the transmission. This minimizes clutch wear and need for adjustment. Trucks have hydraulic brakes, four-point lubrication, and 27-to-1 planetary steering. Made by **Mercury Mfg. Co.**, 4700 W. Division St., Chicago 51, Ill.

For more details circle NED-674 E8 on enclosed inquiry slip

CYLINDER TURNING ROLLS
powered unit speeds welding

Two models of Piper series of power and idler turning rolls are designed for rotating 3½ to 36-in. OD and 10 to 60-in. OD pipe and cylindrical work. A

variable speed drive powering the rubber-tired turning rolls gives welding or surface speeds from 6 to 60 ipm. Capacities range to 6000 lb. Motor operates on 110-v 60-cycle ac. Made by **Pandjiris Weldment Co.**, 5155 Northrup Ave., St. Louis 10, Mo.

For more details circle NED-675 E8 on enclosed inquiry slip

Stepless VARIABLE SPEED

INFINITELY VARIABLE Zero-Max CONTROL DEVICES

Model 54

- Change speeds instantly
- Change speed any time
- All speeds zero to maximum
- Full power at all speeds
- Over 250 models and types

Rated at 60 in. lb. torque, (max. ½ h.p.) delivers stepless speeds from zero to ¼ input speed with full rated torque at any speed. Lever control standard, screw control optional. Available with various input and output shaft arrangements and rotation. This heavy duty unit also available in a motorized package.

- With or without reverse
- With or without gearhead
- With or without motor
- 1/30 through ¾ h.p.

Special models and Application data available. For complete information write for Bulletin NED-558 TODAY

REVCO INCORPORATED
1900 Lyndale Ave. S. • Minneapolis 5, Minn.

For more details circle NED-676 E8 on enclosed inquiry slip

it's SHARP . . . it's CLEAR when you inspect with . . .

PIKE 4½ power ACHROMATIC

FLASH-O-LENS illuminated magnifiers

4½x portable battery model; also electric "plug-in" models

- sharp focus
- adjustable image
- built-in illumination
- quick conversion to 7, 20 or 40 power with interchangeable lenses

WRITE TODAY for literature showing uses, types, prices

20x or 40x

PIKE REG. U. S. PAT. OFF.

Since 1927—manufactured in the U.S.A. by—

E. W. PIKE & CO., INC.
577 Penna. Ave., Elizabeth, N. J. • Elizabeth 2-0630

For more details circle NED-677 E8 on enclosed inquiry slip

MODERN HEATING FOR INDUSTRY

Reznor gas heaters offer the efficient, economical answer to all these heating problems:

- complete heating systems for new buildings
- replacement of obsolete heating systems
- supplemental heating for trouble spots
- heating for auxiliary buildings
- heat for curing, drying and other process applications

With suspended, duct and free-standing types in all appropriate sizes from 25,000 to 2,000,000 Btu, the Reznor line includes the equipment which is exactly right for *your* plant heating job.

For complete details, write today for your copy of Bulletin GN-57 or give your nearby Reznor distributor a call. You'll find him listed under "Heaters-Unit" in the Yellow Pages.

REZNOR
WORLD'S LARGEST-SELLING DIRECT-FIRED UNIT HEATERS

Reznor Manufacturing Company, 41 Union Street, Mercer, Pennsylvania

For more details circle NED-678 E8 on enclosed inquiry slip

for Maximum Convenience in **LAB** or **SHOP**

The W5MT VARIAC® auto-transformer is one of the more popular units in the VARIAC line. It is a portable, cased model, equipped with carrying handle, 6-foot line cord, convenience outlet and thermal overload protector manually reset from front of panel. It is available in several styles for 2- or 3-wire line cords for 115-volt input or 2-wire line cord for 230-volt input.

The 115-volt models are rated at 700 va; the 230-volt units at 550 va. Both have the exclusive VARIAC features including DURATRAK brush track construction, direct-reading dials, continuously-adjustable output voltages from 0 to line voltage or 0 to 117% of line voltage.

Write for the Variac Bulletin for Complete Data

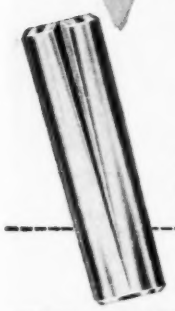
GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U. S. A.

Broad Avenue at Linden, Ridgefield, N. J **NEW YORK AREA** 1000 N. Seward St. **LOS ANGELES 38**
8055 13th St. Silver Spring, Md. **WASHINGTON, D. C.** 1150 York Road, Abington, Pa. **PHILADELPHIA**
1182 Los Altos Ave., Los Altos, Calif **SAN FRANCISCO** 6605 W North Ave., Oak Park, Ill. **CHICAGO**
In CANADA: 99 Floral Parkway, TORONTO 15

For more details circle NED-679 E8 on enclosed inquiry slip

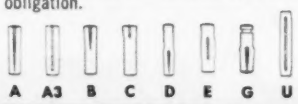
have you checked **DRIV-LOK PIN** *advantages?*



1. Positive anchoring . . . once in they *stay in* . . . yet they're reusable
2. Stronger, safer, solid body
3. Quick installation . . . Lower Costs

DRIV-LOK Pins are effecting great economies and product improvement in applications of every type. Easy to install—just drill the hole and press or drive them in. The job is done—no reaming, no expensive hole preparation. Available in carbon steel in 8 standard types; also a wide variety of special materials. Write us, describing your fastening requirements. Catalog and samples sent without obligation.

TYPICAL APPLICATIONS:

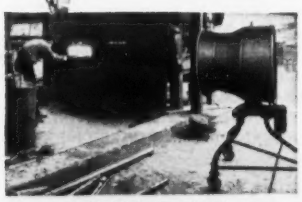


DRIV-LOK SALES CORPORATION
717 Park Avenue • Sycamore, Illinois

For more details circle NED-680 E8 on enclosed inquiry slip

For Man-Cooling!

Coppus Airplane Type Heat Killer® **cools large areas — restores efficiency**



HEAT KILLER on the job in drop forge plant.

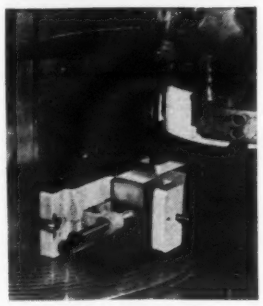
Steel mills, drop forge plants, foundries and other plants with hot working conditions find this Coppus Heat Killer increases worker efficiency . . . at reasonable cost. *A single fan cools large areas.*

Other types also available for cooling furnaces, electrical equipment, for driving out gases, drying out products, drawing out fumes. Write now for detailed information. COPPUS ENGINEERING CORPORATION, 405 PARK AVENUE, WORCESTER 2, MASSACHUSETTS.

ANOTHER **COPPUS** "BLUE RIBBON" PRODUCT

For more details circle NED-681 E8 on enclosed inquiry slip

SMALL PARTS FIXTURE for grinding or milling operations

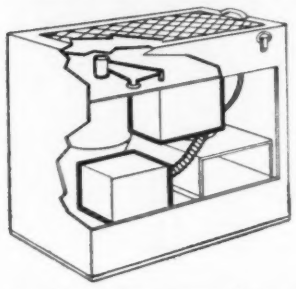


A secure, economical means for holding small and medium-size workpieces for precise squaring operations on grinders or milling machines is afforded by this Multi-Square fixture. Work is held to a precise vertical leg by a clamp pivoted at the rear of the leg. Thus, one side can be machined perpendicular to a previously finished flat surface. Machined and ground from normalized semisteel castings, fixture is also suited for drilling, layout, and inspection work. Vertical clamping surface is a replaceable tool steel face. Made by **Manchester Machine & Tool Co.**, Dept. MM, 5142 Manchester Rd., Akron 19, Ohio.

For more details circle NED-682 E8 on enclosed inquiry slip

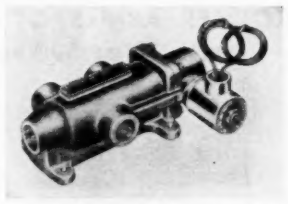
AUTOMATIC SHAKER SYSTEM for Dustkop dust collectors

Filter maintenance and replacement in Dustkop air recirculating dust collectors are minimized with installation of this automatic shaker system. It functions through shaking action of one or several hammers within the collectors. In small Dustkop models, single hammer is solenoid driven, whereas hammers in multiple filter models are motor driven. Shaking action starts automatically each time dust collector is shut off, freeing the filters from dust. Made by **Aget Mfg. Co.**, 1396 E. Church St., Adrian, Mich.



For more details circle NED-683 E8 on enclosed inquiry slip

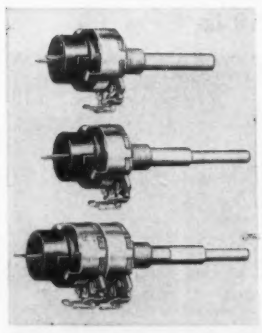
FOUR-WAY AIR VALVES have single or double solenoids



Full line pressures can be supplied to cylinders from a remote position by these four-way, single or double solenoid - actuated air valves, available with or without subbase. Suited for operating double-acting cylinders, the valves keep one side of the cylinder under air pressure until actuation exhausts the air pressure from the original side and applies it to the other side, thereby reversing the cylinder piston action. Valves are available for 110, 220, or 440 v ac in 1/4, 3/8, 1/2, and 3/4-in. NPT sizes, and are suitable for continuous or intermittent duty. Accessories include adjustable, two-piece cams with markings for setting time of valve actuation; two-piece cam with long dwell; and a nonadjustable, one-piece cam for small shafts. Made by **Scovill Mfg. Co.**, A. Schrader's Son Div., 478 Vanderbilt Ave., Brooklyn 38, N. Y.

For more details circle NED-684 E8 on enclosed inquiry slip

VARIABLE RESISTORS have push-on, push-off switches



Television and radio receivers, phonographs, instruments, and similar equipment are applications for three variable resistors with push - on, push - off line switches. They feature independence of control and switch action. Three basic control types are: Type LE single - shaft, single - section variable resistor and switch; Type L3E dual concentric shaft, single-section control with resistor operated by turning the outer shaft and the switch operated by pushing the inner shaft; and Type LXE dual concentric shaft, dual-section control with the resistor sections operated by turning the two shafts and the switch operated by pushing the inner shaft. Switch is a single-pole single-throw, snap-action, maintained-contact type with a UL-rating of 3 amp at 125 v ac-dc or 1 amp at 250 v ac-dc. Made by **Stackpole Carbon Co.**, Dept. NED, St. Marys, Pa.

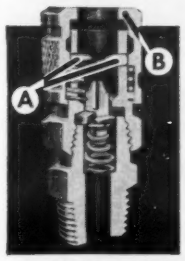
For more details circle NED-685 E8 on enclosed inquiry slip

Extra Safety...Fast!

simple twist locks John Henry Couplers

***NOW*...a quick detachable coupler or permanent connection**

- *Twist sleeve to lock...reverse twist to unlock.*
- *Light, strong, semi-automatic...for air, oil or grease lines.*



Use direct to reciprocating tools, John Henry Couplers need no lead hoses. Specially designed dogs (A) hold tighter, grip 41% of locking surface. Extra safety—will not disconnect in locked position.

Easy to replace parts . . . change valve, spring or washer without special tools. Front flange (B) on chrome sleeve eliminates usual wear at front . . . increases strength 150%. Plug swivels freely.

NEW FREE CATALOG...write today *Gives complete specifications for John Henry, Foster-Matic and Foster ball-type couplers.*

FOSTER MFG. CO., INC.
2850 Gravois Dept. 2-C, St. Louis 18, Mo.

For more details circle NED-686 E8 on enclosed inquiry slip

SAVE TIME TESTING PRESSURE VESSELS
Seal Any Opening in 2 SECONDS
WITH *"Quick-Seal"*
TEST PLUGS AND FILLING CONNECTORS

"Quick-Seal" Test Plugs and Filling Connectors will reduce pressure test costs by sealing virtually any opening in 2 seconds or less. Can be used in unfinished or finished holes—shallow or deep—to provide leak-proof seal of air or liquid pressures up to 500 psi or greater. "Quick-Seal" Test Plugs and Filling Connectors are widely used by manufacturers of tanks, boilers, drums, castings, radiators, etc. . . . and are sold on a guaranteed satisfaction basis.

"Quick-Seal" Self-Sealing Test Plugs—use test pressure to insure leak-proof seal. Capacities to 500 psi.

"Quick-Seal" Self-Sealing Filling Connector—adapts and seals air or liquid pressure lines to standard or extra deep openings in all types of vessels. Capacities to 500 psi.

"Quick-Seal" Expanding Seal Test Plugs and/or Filling Connectors—manual or pneumatic types for low pressure testing. Can be used in rough or machined openings in all types of vessels, systems and assemblies.

Get complete details on time saving "Quick-Seal" Plugs and Connectors. Write for free illustrated catalog today.

MECHANICAL PRODUCTS CORPORATION
176 North Ogden Avenue, Chicago 7, Illinois

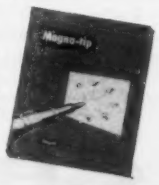
For more details circle NED-687 E8 on enclosed inquiry slip

STOP "FUMBLEITIS" WITH

Magna-tip® MAGNETIC SCREW DRIVING ACCESSORIES

Magna (magnetic) bit holders, finders and sockets for all power screwdrivers, eliminate "fumbleitis" by firmly holding screws, bolts or nuts in assembly operations. Proven in use in hundreds of plants, Magna-Tip accessories can help push your production up and costs down. Ask your power screwdriver salesman to show you these handy Magna accessories.

WRITE *for manual on the complete line of Magna-Tip bit holders, finders, sockets and hand screwdrivers: Dept. 81G1, Magna Driver Corp., 779 Washington St., Buffalo 3, N. Y.*



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FOR INDOOR OR OUTDOOR USE

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- Gathers trash at easy walking pace
- Easily operated by unskilled labor
- Powered by 2½ HP Briggs Stratton or Lauson 4-cycle engine operating at ⅔ rated RPM
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MID EAST SALES CO. BOX 62 LOCKLAND, OHIO

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Large loads are handled speedily and without concern for aisle clearance or floor conditions with this motor-driven tote box grab and Cleveland Tramrail overhead rail system. Boxes are picked up, delivered and stacked by the cab operator, alone, with controls in the cab.

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THE CLEVELAND CRANE & ENGINEERING CO.
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CLEVELAND TRAMRAIL

For more details circle NED-690 E8 on enclosed inquiry slip

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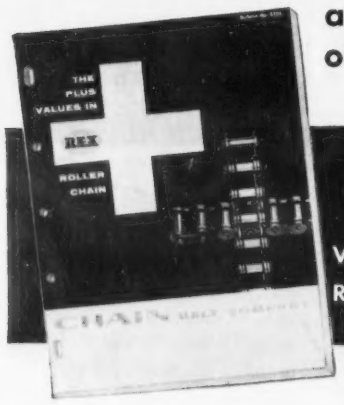

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Bulletin 5725 explains why Rex Roller Chains last longer ... why Rex Roller Chains have greater resistance to fatigue and failure. Write today for your copy of Bulletin 5725, "The Plus Values in Rex Roller Chain." CHAIN Belt Company, 4686 West Greenfield Avenue, Milwaukee 1, Wisconsin.

CHAIN BELT

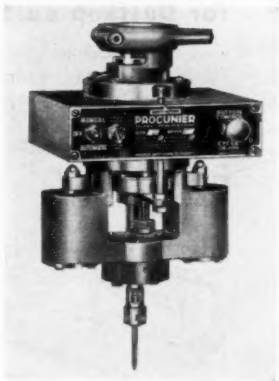
For more details circle NED-691 E8 on enclosed inquiry slip

ALKALINE BATTERY CELL
for high-drain, continuous-duty use

Up to ten times longer service than a standard flashlight cell at three times the cost is provided by the Eveready leak-proof Energizer alkaline cell. The flashlight cell-size unit is engineered for high - drain, continuous-duty applications. It can also deliver energy at a faster rate than conventional flashlight cells. Energizer is rated at 1.5 v and is offered in 3.8-oz, 20-amp D size and 1.6-oz, 8-amp half-length D size. Operating temperature range is −40 to 200° F. Made by **National Carbon Co.**, Dept. 1325, 30 E. 42nd St., New York 17, N. Y.

For more details circle NED-692 E8 on enclosed inquiry slip

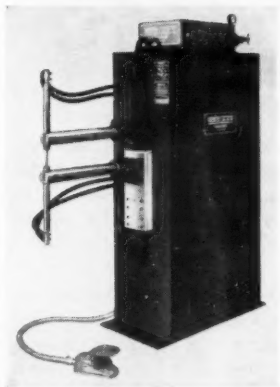
AUTOMATIC TAPPING HEAD
has No. 00 to 3/16-in. capacity



Uniform precision threads are produced with this pushbutton actuated, lead screw, tapping attachment for standard drill presses. Operating on 18 to 40-psi air pressure and controlled by 110-125-v ac, head has a tap capacity from No. 00 to 3/16 in. in steel and up to ¼ in. in softer materials. A touch of a pushbutton feeds the tap gently and automatically through its preset cycle without pressure on the tool. Interchangeable lead screws offer choice of 20 to 96 pitch. Maximum lead screw travel is 1 3/16 in., and thread depth can be held within 0.005 in. Made by **Procunier Safety Chuck Co.**, Dept. N, 18 S. Clinton St., Chicago 6, Ill.

For more details circle NED-693 E8 on enclosed inquiry slip

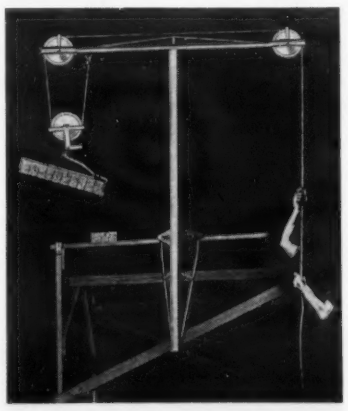
ROCKER ARM SPOT WELDER
with 30 or 50-kva transformer



Unusually rigid O-size frame and transistorized control with plastic coated printed circuits and plug-in components suit this single-phase SR O rocker arm spot welder to metalworking shop conditions. Welder is versatile for general-purpose applications where relatively light gage metals are fabricated. It is available with 30 or 50-kva transformer. Throat depth can be varied from 12 to 42 in. by choice of six arm lengths. Made by **Sciaky Bros., Inc.**, Dept. SR O, 4915 W. 67th St., Chicago 38, Ill.

For more details circle NED-694 E8 on enclosed inquiry slip

PORTABLE HOIST
has capacity of 250 lb



One man can load material weighing up to 250 lb, then hoist it and swing it into position for automatic unloading with this portable hoist. Brick, block, tile, planking, and kegs are typical materials that can be unloaded at any position on the scaffold, whether it be 15 or 115 ft above. The hoist can be erected in 21 sec and can be adapted to many hoisting jobs. Automatic release brick and tile clamps and extra-strength manila rope are available. Made by **Clipper Mfg. Co.**, Suite 205, 2800 Warwick, Kansas City 8, Mo.

For more details circle NED-695 E8 on enclosed inquiry slip

RIGHT *data*– RIGHT *ideas*– *to fill your*

MINIATURE LIGHTING NEEDS

For *Pilot—Dial—Indicating—Illuminant* uses, DRAKE's quick-reference catalog simplifies selection of just the *right* Miniature Lighting unit. 16 picture and fact-packed pages include detailed specifications; plus highly useful data on basic unit elements, best choices for various uses, etc. *Project Data Sheet* makes it easy to get specific recommendations for your job. Decades of specialized experience in all aspects of Miniature Lighting make DRAKE first choice for top results, best quality, greatest economy. Dept. N.

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MINIATURE LIGHTING SPECIALISTS

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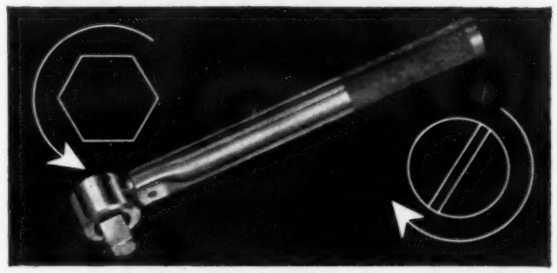
TWO-WAY TORQUING



...with equal accuracy!

It makes no difference which way you turn it – right, left, up or down – this versatile Apco Mossberg Micro-Set Torque Tool measures tension instantly and accurately.

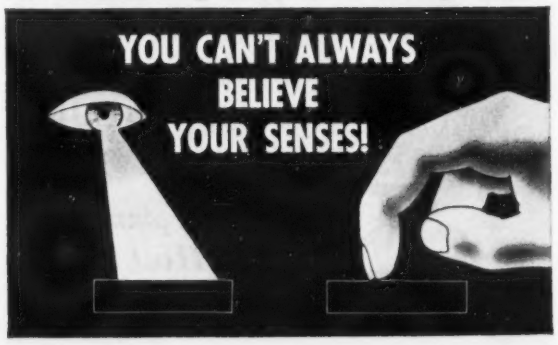
Compact, extremely durable Apco Micro-Set Wrenches facilitate torquing in tight quarters . . . meet top test standards for on-the-job performance. Interchangeable drive heads permit rapid adaptability for use on screws, bolts or nuts. Micrometer-type setting releases automatically at desired tension . . . resets itself after release.

Two-way Apco Torque Wrenches are available in three sizes: 5 to 150 inch-pounds; 100 to 750 inch-pounds; 700 to 1600 inch-pounds. Write for details.

APCO MOSSBERG COMPANY
161 Lamb Street, Attleboro, Mass.

For more details circle NED-697 E8 on enclosed inquiry slip

In Checking Surface Roughness



In judging microinch roughness by eye or by "feel," sometimes you'll get the right answer, and sometimes not. *You can never be SURE;* for the "confusion factors" are many, and the brain misinterprets what the senses report — the same as with optical illusions.

That's one reason why industry depends on a confusion-proof *shop instrument*—the PROFILOMETER®—when dependable roughness measurements are required.

FREE BULLETIN LT1 shows why surfaces that look alike, or feel alike, often differ in roughness by several hundred percent. *Write for it!* You'll be interested, and perhaps surprised.

® *Profilometer is a registered trade-mark.*

MICROMETRICAL MANUFACTURING COMPANY
333 S. Main St. Ann Arbor, Mich.

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NUMBER TWO IN A SERIES

Starting down at -300° F and working all the way up to a hot 750° F, MOLYKOTE Lubricants take in stride tough E.P. friction problems all along the way. That's a working range of lubrication efficiency spanning more than one thousand degrees!

There's a MOLYKOTE type to fit many friction problems and, in terms of their ability to do the job, they're the least expensive lubricants on the market today. You can't afford to be without them.

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MOLYKOTE® LUBRICANTS

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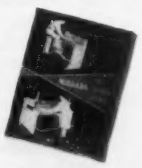
Put new profits into your work with modern foot shears that cut through sheet metal slick as a whistle! Combining rigidity, compactness and light weight, Niagara Foot Squaring Shears handle your cutting jobs with unrivaled ease, accuracy and speed.

Using the convenient, quick-setting, calibrated back and side gages, or the front gage, it's a cinch to line up work on the sturdy, all-welded steel bed. A rugged, one piece steel holddown grips the metal firmly, yet leaves the cutting line clearly visible.

You'll like the smooth action of the treadle. It's well-balanced, powerful, efficient. The rigid steel crosshead is accurately guided by adjustable, non-metallic ways. Sturdy, stable housings maintain alignment of working parts, accuracy of knife travel, and eliminate need for bolting to floor. Long-lasting Niagara knives maintain their keen cutting edge, assure maximum service.



Find out how Niagara Foot Squaring Shears can turn out better work at greater profits to you. Niagara offers you a complete line — Series F (22" - 120", 18 & 16 ga.) and Series G with 18" Gap (36" - 72", 16 ga.) — to meet light sheet metal requirements with ease . . . as well as the largest range of power shears in the industry. Write for new, illustrated Bulletin 80-FC today.

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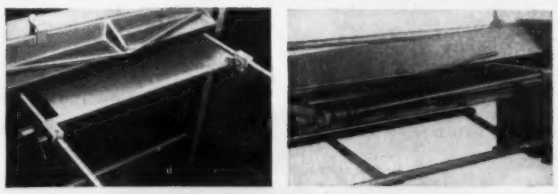

CONVENIENT GAGES FOR EASY, ACCURATE ADJUSTING

(Left) Quick-setting and locking, calibrated back gage. (Right) Ball bearing, self-measuring parallel back gage on large models. Adjustable, calibrated side gages (not shown).

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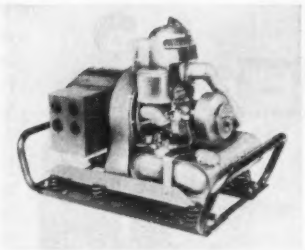
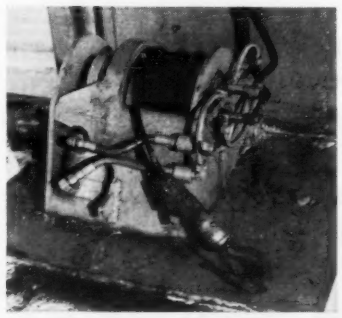
3000-WATT GENERATORS
driven by gasoline engines



Source of power for operating electric drills, saws, concrete vibrators, floodlights, oil burners, refrigerators, or stoves is provided by two 3000-w, gasoline engine-driven generators. Both Model 8A115, rated at 115 v, 60 cycles, and Model 8A115/230, rated at 115/230 v, 60 cycles weigh 140 lb. They feature 4-per cent voltage regulation, ample overload capacity, and a Homelite two-cycle gasoline engine coupled directly to the armature shaft. Carrying handles are provided. Made by **Homelite**, 622 Riverdale Ave., Port Chester, N. Y.

▲ For more details circle NED-701 E8 on enclosed inquiry slip ▲

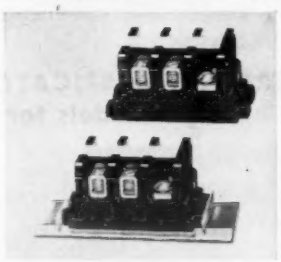
HYDRAULIC POWER WINCH
develops up to 6000-lb line pull



Powered by twin, heavy duty, two-way hydraulic cylinders that transmit power directly to the drum drive shaft, this winch operates from 1 to 45 fpm and develops up to 6000-lb line pull on a bare drum. It can be powered by a hydraulic pump delivering as little as 6 gpm. Drum stops and holds load automatically in case of line or power failure. It is compact and weighs only 600 lb. Made by **Teale & Co.**, 1417 N. 52nd St., Omaha, Nebr.

▲ For more details circle NED-702 E8 on enclosed inquiry slip ▲

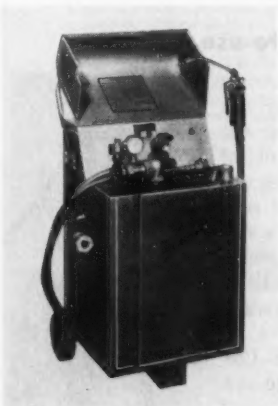
SECTIONAL TERMINAL BLOCKS
assemble without fastening hardware



On-the-job assembly to any number of circuits, with choice of contacts and mounting methods, is speeded with medium duty sectional Pres-Sure terminal blocks. They may be assembled on the job without fastening hardware, or may be factory preassembled to required specifications. Tubular contacts have a screw contact for two or more No. 18 to No. 8 wires, or clamp contact for No. 22 to No. 10 wire. Strap screw contacts take terminal-ended or looped wires, or ring or spade terminals. Contacts are on 7/16-in. centers. Blocks are rated at 750 v and measure 63/64 in. high by 1⅛ in. wide. Flat base blocks permit direct mounting and dovetail base blocks permit channel mounting. Marking strips provide circuit identification. Made by **Buchanan Electrical Products Corp.**, 225 Route 22, Hillside, N. J.

▲ For more details circle NED-703 E8 on enclosed inquiry slip ▲

STEAM CLEANER
portable unit operates on 220 v



Operating without water connections, the Model 24 portable electric steam cleaner requires only a 220-v electrical connection. Once its boiler is filled with water, there is nothing further to adjust or regulate. One filling provides steam for about 4 hr of continuous use. A separate detergent tank is contained within the cabinet. Cleaning solutions are regulated and mixed with steam at the nozzle tip. Pure steam can be used for cleaning by shutting off the detergent supply. The UL-listed cleaner has rubber-tired wheels, weighs 135 lb, and sells for $299. Made by **Polaris Industries, Inc.**, Third Avenue N.W., Roseau, Minn.

▲ For more details circle NED-704 E8 on enclosed inquiry slip ▲

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MERRILL
MATERIAL HANDLING DEVICES

For Interesting Information write

MERRILL BROTHERS
56-13 Arnold Ave., Maspeth, N. Y.
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With this handy, LOW COST pressure measuring gauge and an ordinary shop vise, many important tests may be conducted. Also checks pressures between rollers, platens, in arbor presses, etc. Capacities from as low as 0-10 lbs. up to as high as 0-50 lbs. Accurate to within one division. Fully jewelled. Will fit into SMALL space. Tension models also available.

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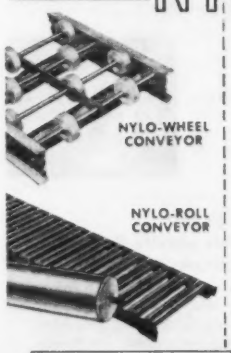
Resists
ALL FOOD ACIDS
STEAM CLEANING
SALT BRINE
MILD ACIDS
DETERGENTS
SAND - GRIT - OIL

LASTS 10 TIMES LONGER THAN STEEL BEARING CONSTRUCTION

METZGAR NYLO®



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WHEEL or ROLLER
GRAVITY or POWER
FOR USE IN
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Only Metzgar has NYLO-® construction. In many conveyor applications in food processing where steel fails, NYLO-® functions perfectly. Lighter, cleaner, tougher, needs no lubrication.

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MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES
GRAND RAPIDS 4, MICH.

▲ For more details circle NED-707 E8 on enclosed inquiry slip ▲

A NECESSITY in automatic switching, bumpers automatically release tow pin, set brakes on encountering an obstruction; release brakes, lower tow pin when obstruction is removed.

A SAFETY PLUS on any system! These bumpers give *added* protection for men and materials. *Other SI safety features:* ROUND CORNERS; ROLLED UNDER DECKS, BRAKES.

Many designs in trailers, trucks, manual and dragline carts

Send for Illustrated Literature or Phone Easton 3-4145

*PATENTED

SI HANDLING SYSTEMS
A DIVISION OF
SAFETY INDUSTRIES, INC.
P. O. BOX 70 • EASTON, PENNSYLVANIA

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3-WAY CHOICE OF LOCKING BOLTS

Free brochure . . . is handy guide in designing or buying any headed parts.

NYLOK®
. . . self-locking fasteners prevent air and fluid leaks. Stay locked in ANY position . . . won't vibrate loose. Permanent nylon insert won't shrink, dry, age, or turn brittle.

SPIN LOCK
. . . washer-head teeth prevent loosening . . grip tighter under extreme vibration. For oil and water-tight connections.

PLACE LOCK
. . . vibration-proof . . . needs no lock washer. Stays wrench tight under shock, impact, rotation, and vibration.

®"The Nylok Corporation"

BUFFALO BOLT COMPANY
Division of Buffalo-Eclipse Corporation
NORTH TONAWANDA, N. Y.

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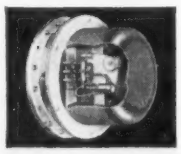
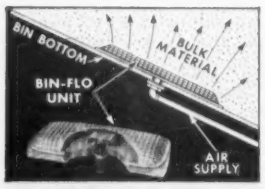
NEW BIN LEVEL INDICATOR

New ROTO-BIN-DICATOR®
Motor driven paddle-type bin level indicator
For automatic bin level indication or control of bulk materials. Particularly suited to applications on bins subject to pressure or vacuum.
EXPLOSION-PROOF
U. L. listed units available

BIN-DICATOR®
The original diaphragm-type bin level indicator. In successful use for 20 years.





BIN-FLO®
Assures gravity flow of pulverized materials
Bin-Flo Aerator units in bins, chutes, etc., use small volume, low pressure air to restore flow to dry, pulverized materials which tend to pack and bridge in storage.

THE BIN-DICATOR CO.
13946-A Kercheval • Detroit 15, Mich.

Write for detailed Literature or call
VAlley 2-6952

WE SELL DIRECT • PHONE ORDERS COLLECT

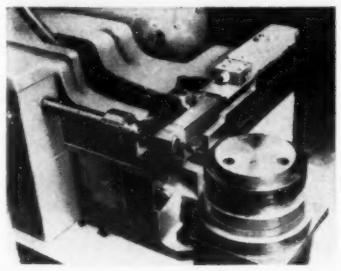
▲ For more details circle NED-710 E8 on enclosed inquiry slip ▲

LOW-PRICED DUPLICATOR
in manual and electric models

Three low-priced duplicating machines have been added to the Ditto line. Hand-operated Model D-30 and electric Model D-31 are attractively finished in sand gray and green. Copies fall automatically into stacked alignment in the receiving tray. Positive registration of master to copy paper is obtained with a knurled wheel in the drum. Liquid control dials, calibrated by paper size, assure fluid economy. Speed is two copies per second. Paper can be any weight from 13 lb to card stock ranging in size from 3 x 5 in. to 9 x 14 in. Third machine is the Model D-20 which is budget-priced at $175. Made by **Ditto, Inc.**, Dept. WS, 6800 McCormick Rd., Chicago 45, Ill.

▲ For more details circle NED-711 E8 on enclosed inquiry slip ▲

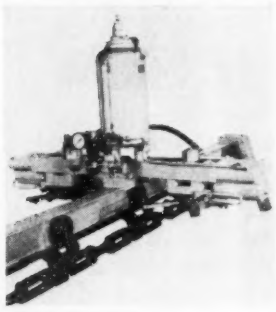
SOCKET SET SCREW DRIVER
automated machine cuts costs



Capable of up to 2500 complete installations per hour, this Setomatic automated machine automatically feeds, inserts, and tightens socket set screws ranging in diameter from No. 6 to 3/8 in. and in lengths to 3/4 in. It is adaptable for use as a single machine, or it can be an integral part in a continuous production line. It handles set screws with any type of point and drives them to any preselected tightening torque. Screws are vibrating-hopper fed, oriented, and delivered to drive mechanism through a driver-feed tube. Made by **Standard Pressed Steel Co.**, Box 581, Jenkintown, Pa.

▲ For more details circle NED-712 E8 on enclosed inquiry slip ▲

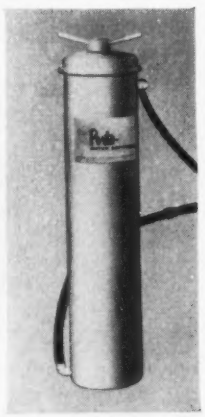
TROLLEY LUBRICATORS
eight models for oil or grease



Amount of grease or oil injected into each trolley conveyor wheel by the Freiman automatic trolley lubricators is adjustable. Any trolley spacing from several yards to as close as 6 in. can be accommodated. A built-in air cushion allows a bent trolley to pass without breaking the nozzle. Only power sources required are an air line and the moving conveyor. Lubricators are available in eight models, including "power and free," chain and roller chain types for either oil or grease. Made by **Olsen Mfg. Co.**, Dept. N, 638 S. Rochester Rd., Clawson, Mich.

▲ For more details circle NED-713 E8 on enclosed inquiry slip ▲

WATER SOFTENER
portable, ready-to-use unit



Lime, magnesium, and iron are removed from hard water by the Porta water softener to prevent their accumulation in the coils of steam cleaning or other equipment. The portable unit produces 1000 gal of zero soft water when water supply is 10 grains hard. It requires only 7½ lb of salt and 15 min to regenerate. Mineral used for softening is Rohm & Haas Amberlite IR-120, a high capacity ion exchange resin. Softener tank is Bonderized steel, plastic lined to prevent corrosion, and tested to 120 psi. It is offered with hoses, ready for use. Made by **Porta Water Softener Co.**, Dept. NED, 200 Moen Ave., Joliet, Ill.

▲ For more details circle NED-714 E8 on enclosed inquiry slip ▲

New!

DUAL-LOCK... A high-load structural fastener

Here's a new high-load, positive-locking structural fastener that can cut your assembly costs on demountable buildings, shipping containers, aircraft cowlings, etc.

Check these Dual-Lock features:
- Double-acting take-up insures heavy closing pressure; provides pressure-tight seal when gaskets are used.
- Trigger action insures full open and full closed positions.
- Vibration-proof and impact-proof.
- Easily installed; can be recessed in panels or surface-mounted.
- Withstands 7000-lb. tension.

Write today for samples and 40-page catalog.

SIMMONS FASTENERS
Quick-Lock · Spring-Lock · Rate-Lock · Link-Lock · Dual-Lock · Hinge-Lock

SIMMONS FASTENER CORPORATION
1793 North Broadway, Albany 1, N. Y.

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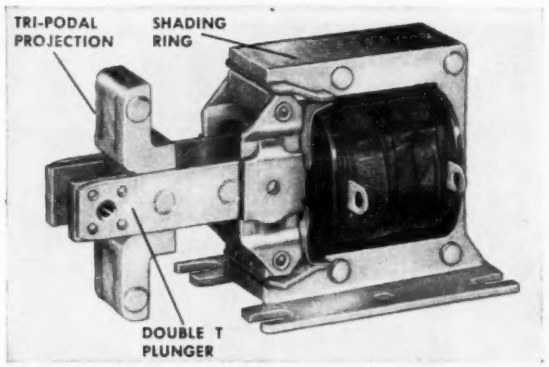


Soreng's NEW double T design solenoid packs more pull for more applications

Soreng's exclusive double T (TT) plunger construction makes the big difference. This unique design results in level, more powerful pull throughout the useful plunger stroke. And Soreng solenoids are more efficient — thanks to stable tripodal seating and tightly locked shading rings. These features are custom-built into each of Soreng's four basic solenoid types satisfying virtually any application need at production run prices.

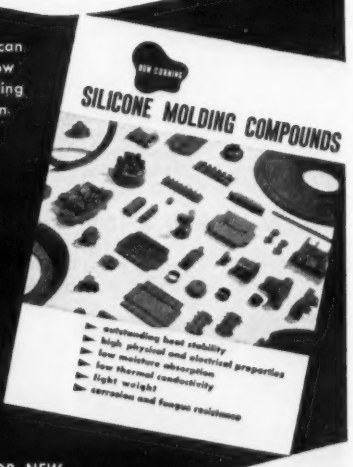
Write for new Solenoid Bulletin. It contains drawings, power curves, applications and other technical data on Soreng solenoids.

CONTROLS COMPANY OF AMERICA
Manufacturers of SORENG Controls
9577 SORENG AVE., SCHILLER PARK, ILL.

▲ For more details circle NED-716 E8 on enclosed inquiry slip ▲

get this NEW data on SILICONE MOLDING COMPOUNDS

Parts that resist 700 F can be fabricated from Dow Corning Silicone Molding Compounds. In addition to heat stability, they possess high strength, light weight, low thermal conductivity, and excellent dielectric properties. Dow Corning molding compounds are chemically inert and do not support fungus. New booklet contains full information.



SEND FOR NEW BOOKLET AND FREE SAMPLE DEPT. 545

first in silicones

Dow Corning CORPORATION
MIDLAND, MICHIGAN

▲ For more details circle NED-717 E8 on enclosed inquiry slip ▲

CESCO...RIGHT—BEFORE YOUR EYES!

NEW!
Flexible Plastic Goggles

MEET WIDE RANGE OF INDUSTRIAL APPLICATIONS

New CESCO No. 565 Flexible Plastic Goggles

• Extremely lightweight and durable—molded from soft vinyl material—these #565 CESCO Flexible Plastic Goggles protect workers from dust, splashing liquids and moderate impact from any direction.

Comfortable to wear • They are perfectly contoured and fit snugly all around. Small perforations, angled away from the eyes, give adequate ventilation.

Give complete protection • They leave no open spaces. Fit perfectly over most personal glasses.

Permit full view • Wide window lenses are curved rather than flat to allow best vision.

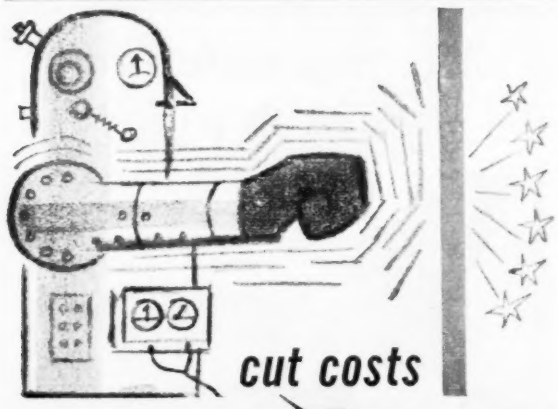
Available in two styles • No. 565C (with clear plastic lens) or No. 565G (with green plastic lens).

ASK your CESCO Safety Equipment Distributor to show you this new goggle and the many other goggles in the complete CESCO line

CHICAGO EYE SHIELD COMPANY
2715 West Roscoe St.,
Chicago 18, Illinois

CESCO FOR SAFETY

▲ For more details circle NED-718 E8 on enclosed inquiry slip ▲



cut costs
with ELECTROPUNCH

This high-production tool delivers controllable impacts — from light tapping to 3500 lb.* blows. It's shown here mounted on the Electrotable—B&W's fast, accurate indexing unit. Free booklet tells you how to speed up riveting, staking, marking, etc. Write for it *today*.

*Other models to 10,000 lbs.

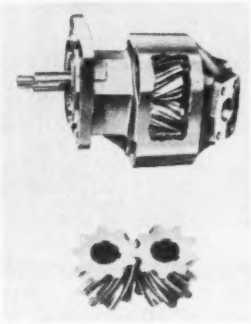
BLACK & WEBSTER, INC.

Dept. 1, 445 Watertown Street,
Newton 58, Mass.

Solenoid Operated Production Tools

▲ For more details circle NED-719 E8 on enclosed inquiry slip ▲

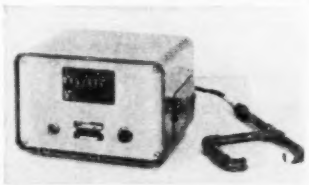
HYDRAULIC GEAR PUMP
delivers 3 to 250 gpm at 1500 psi



Elliptical profile of gears in this Hydroid rotary hydraulic pump eliminates trapping of liquid between the teeth. This design permits speeds in excess of 4000 rpm with pressures of more than 1500 psi. Flow rates of 3 to 250 gpm are available. Pump can be tailored for materials handling, construction machinery, farm equipment, machine tools, and aircraft hydraulic systems. Made by **Hupp Aviation Co.**, Dept. NED, 6633 W. 65th St., Chicago 38, Ill.

▲ For more details circle NED-721 E8 on enclosed inquiry slip ▲

ELECTRONIC COUNTER
rated 3000 counts per minute



A high speed magnetic counter combined with a permanently - assembled light source and photo cell comprise the Model C Count-Pak electronic counter. Unit features instant reset and accurate rated speed of 3000 counts per minute. Compact cell unit can be made in any configuration to suit the application. Device is actuated by pulses as short as 0.0002 second. Thus, a 1/4-in. object or space moving at 6000 fpm will actuate the counter. Transistors and printed circuits assure long service life. Made by **Veeder-Root Inc.**, Electronic Controls Div., 19-P Sargeant St., Hartford 2, Conn.

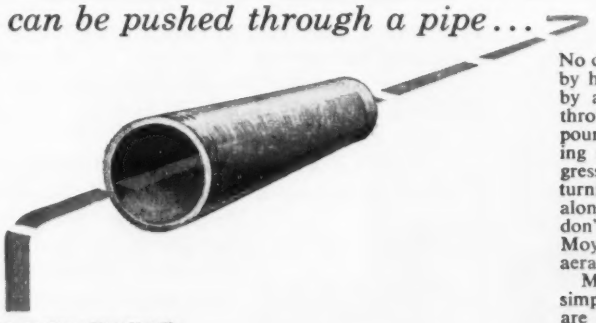
▲ For more details circle NED-722 E8 on enclosed inquiry slip ▲

PUNCHING UNITS
are self-aligned, self-contained

Punch presses and press brakes can be equipped with LP Series self-aligned and self contained punching units, available in three widths. They will pierce from 0.093 to 0.625-in. diameter holes in mild steel up to 1/8-in. thick. Shut height is 5 1/2 in., and die height is 2 19/32 in. Range of interchangeable punches and dies is available for each unit. All feature a shoulder die removable from the front without removing the unit from a set-up, high initial pressure—uniform stripping pressure disc stripper spring, and a holder which allows piercing of angles close to the inside leg. Made by **Toolset, Inc.**, 1413 Military Rd., Buffalo 17, N. Y.

▲ For more details circle NED-723 E8 on enclosed inquiry slip ▲

if it can be pushed through a pipe...



you can pump it with a

MOYNO®

No doubt, in your plant, certain materials are being moved by hand expensively that could be pumped economically by a Moyno. They pump anything that can be forced through a pipe . . . from very thin liquids to heavy, non-pourable abrasive substances . . . even materials containing suspended particles! As the illustration shows, progressing cavities, formed by the helical screw-like rotor turning inside the double-helical stator, move smoothly along, carrying the material with them . . . the cavities don't squeeze the substance . . . can't stick or gum up. Moyno pumps will not cause churning, foaming . . . won't aerate or vapor-lock!

Moynos are adaptable for a wide range of substances simply by modifying the materials the pumping elements are made of. They are available to pull up to 29" of vacuum while discharging under pressure. If you have a pumping problem, chances are a Moyno will solve it!

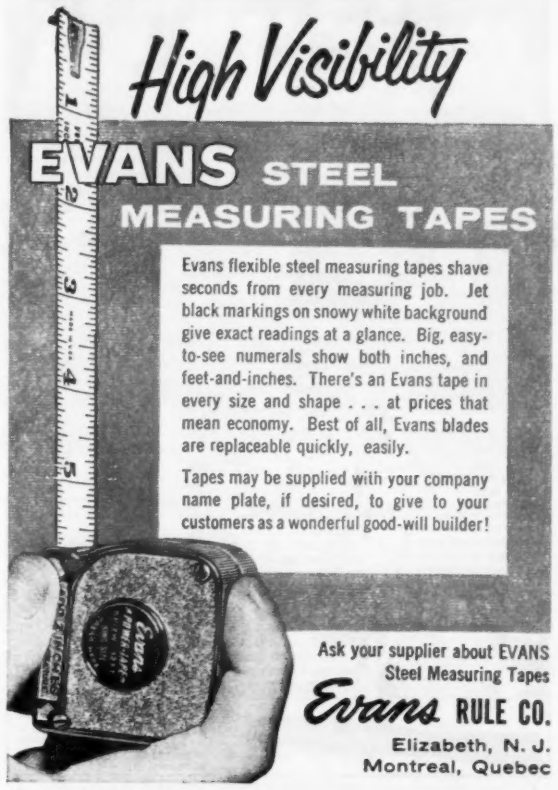
Look in the yellow pages for the name of your nearest R & M Moyno Pump representative, or write today, for Bulletin 30-NE.

Industrial type Moyno . . . available to 500 gpm, pressures to 1000 psi

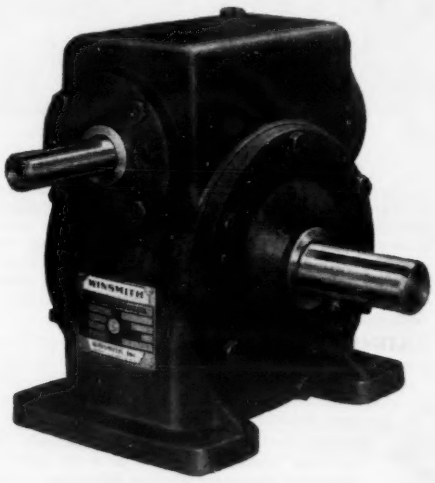
ROBBINS & MYERS, INC.
SPRINGFIELD, OHIO — BRANTFORD, ONTARIO

Motors Fans Hoists Moyno Pumps Propeller Industrial Fans

▲ For more details circle NED-720 E8 on enclosed inquiry slip ▲



all the way up to 34 hp!



Winsmith worm gear speed reducers

For top performance on your big jobs, Winsmith Worm Gear Speed Reducers are available for any application up to 34 horsepower. Compact, efficient, economical — with endurance to spare — Winsmith Speed Reducers offer you the most complete line of standard models, sizes and drive arrangements from a single source. For speed reducer requirements all the way down to 1/100 hp, you'll find it pays to specify Winsmith.

WRITE TODAY FOR CATALOG NO. 156
for useful information on selection, operation and maintenance of the hundreds of sizes and types of Winsmith Speed Reducers.

WINSMITH, INC.
119 Eaton Street, Springville, (Erie County), N. Y.

▲ For more details circle NED-724 E8 on enclosed inquiry slip ▲

▲ For more details circle NED-725 E8 on enclosed inquiry slip ▲

Smooth Operators

Here's a dramatic test to show just how smooth. A coin placed on end, atop the operating compressor, remains standing. You simply can't get smoother operation. It's all because of rotary motion and the elimination of reciprocating parts. And here's the result of this smooth operation: constant efficiency, compactness, low maintenance, with no costly foundations needed.

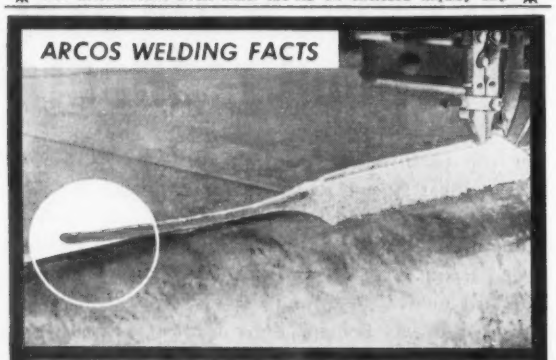
RATINGS — Choose from twelve sizes of two-stage *Ro-Flo* compressors, ranging from 250 to 1800 cfm at pressures from 60 to 125 pounds gauge. Single-stage units handle pressures up to 50 pounds gauge, volumes from 40 to 3000 cfm.

For complete information, ask for Bulletin 16B8244. Call your nearby A-C office or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin.

Ro-Flo is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-C A-5612

▲ For more details circle NED-726 E8 on enclosed inquiry slip ▲



How to Produce Submerged Arc Welds with "Self Removing" Slag

With any of the new Arcosite Bonded Fluxes, the *slag breaks clean* — from the weld — *as it cools*. This means a dramatic reduction in weld cleaning time — an important cost-saving factor in welding stainless and low alloy steels by submerged arc welding. Another saving with Arcosite Flux comes from the small amount of Flux *consumed* per foot of deposited weld metal. For best results, specify Arcos *welding quality* bare wire, Arcosite's companion product.

FREE BULLETIN ON REQUEST

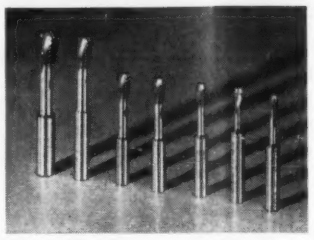
Send for this additional information. Full Application data on five new Arcosite Bonded Fluxes.

Arcos Corporation, 1500 S. 50th St., Philadelphia 43, Pa.

ARCOS | Filler Metal Specialists

▲ For more details circle NED-727 E8 on enclosed inquiry slip ▲

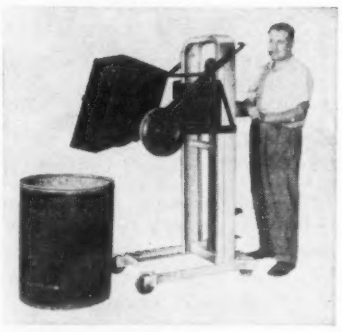
SPIRAL STUB TAPS in No. 2-10 fine and coarse sizes



Excellent shearing action and chip "ride-out" are afforded by this SF-01 spiral flute stub tap. Section immediately behind threads is necked down below root diameter to provide more chip room, reduce drag, and facilitate application of cutting oil or coolant to cutting edges. Regular SP-50 spiral-point plug and SP-70 bottoming spiral-point styles are also available. All three can be furnished in No. 2 to No. 10 machine screw sizes in both coarse and fine series. Made by **Jarvis Corp.**, Stack Street, Middletown, Conn.

▲ For more details circle NED-728 E8 on enclosed inquiry slip ▲

PORTABLE DUMPER lifts 750-lb load to 50 in.



This manually operated, portable dumper has a capacity sufficient to lift a 750-lb load to a height of 50 in. from the floor, where it is automatically dumped. The hopper rights itself while being lowered. An accessory platform transforms the Presto Dumpit No. 50 into a platform lift. Price is $350. Made by **Lee Engineering Co.**, Dept. 554, 269 Armistice Blvd., Pawtucket, R. I.

▲ For more details circle NED-729 E8 on enclosed inquiry slip ▲

LIGHTWEIGHT VACUUM CLEANER is easy to move and handle

Recessed handle and lightness in weight combine to enable even a woman to carry this Series 40 Tornado vacuum cleaner. Measuring 20 in. high by 16 in. in diameter, it weighs 24½ lb. Others features include 350 sq in. internal filter, ½-hp universal by-pass motor, and two-stage turbine fan. Usable for wet or dry cleaning, it develops 62-in. water lift, 340-mph air velocity, and 123 cfm volume. Tank holds 7½ gal. Attachments include a squeegee, wall nozzle, upholstery nozzle, crevice tool, and dusting tool. The 1¼-in. hose has a protective Saran braided cover. Price is $129.50, less attachments. Made by **Breuer Electric Mfg. Co.**, 5106A N. Ravenswood Ave., Chicago 40, Ill.

▲ For more details circle NED-730 E8 on enclosed inquiry slip ▲

POWER FLOOR SWEEPER sweeps aisles 36 to 51 in. wide

At speeds up to 8 mph, hydraulically-driven Hydra-Sweep 51 all-purpose power floor sweeper can sweep over 100,000 sq ft of floor space an hour. Unit is equipped with an adjustable side broom that enables it to sweep aisles from 36 to 51 in. wide. An additional side broom brings total sweeping width to 66 in. Floor clearance is 3 in. Dust is drawn from enclosed brush compartment through a primary cyclone separator into easily cleaned filter. Safety features include one-pedal drive, wrap-around bumper, retractable side brooms, and ample front visibility. Doubling as a tow truck, sweeper will move wheeled loads weighing up to 7 tons at 7 mph. Made by **Industrial Sweeper Co.**, Dept. NED, 2508 S. Main St., South Bend 23, Ind.

▲ For more details circle NED-731 E8 on enclosed inquiry slip ▲

Extreme thermal shock has little effect on VYCOR brand glasses.

Can this glass answer any problem of yours?

Heat? VYCOR® brand glasses withstand temperatures as high as 1300° C. (in intermittent service).

Ultraviolet transmission? VYCOR brand glasses are available for ultraviolet transmittance at 365, 254, or 185 millimicrons.

Infrared transmission? VYCOR brand glasses will transmit infrared up to 3.5 microns—with or without transmission of visible light.

VYCOR brand glasses are resistant to most chemicals, have high electrical resistivity and low dielectric loss.

WRITE FOR BULLETIN B-91. Contains charts, tables and complete information about all 7 VYCOR brand glasses.

CORNING GLASS WORKS
56-5 Crystal Street, Corning, N. Y.
Corning means research in Glass

▲ For more details circle NED-732 E8 on enclosed inquiry slip ▲

Mix **big batches** *of fluids in a jiffy*

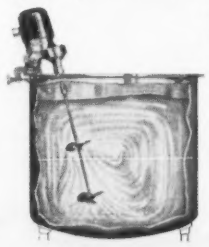
Suspend heavy solids—no job too tough for these rugged mixers

Yes, you can mix batches as big as this 6000-pound vat of clay slurry—and still get *portable* mixer convenience!

Get swift uniformity with LIGHTNIN Portables—at the flip of a switch. Powerful propeller stream sweeps the tank bottom, suspends solids, *tumbles* and *rotates* the batch violently—or gently—as you prefer.

Results guaranteed. You take no risk when you specify LIGHTNIN Portables. Results are unconditionally guaranteed. Thousands of LIGHTNINS are in use; many 25-years and more.

You get widest choice of ball-bearing motors. Quickly removable true-running shaft cannot loosen or jam. Mixer locks instantly in any position. Thirty portable models to choose from, electric or air driven; direct or gear drive; sizes ⅛ to 3 HP. For full details, request 28-page illustrated Catalog B-108.



GET FAST, THOROUGH MIX in any open tank or container. No swirl, no vortex, no dead spots with LIGHTNIN double-action mixing.

Mixers for permanent mounting, too—full selection of LIGHTNINS for tanks to 6 million gallons. Sizes ¼ to 500 HP. For details, request illustrated Catalog B-109.

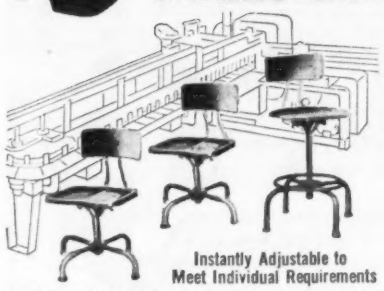
Lightnin® Mixers

MIXCO fluid mixing specialists

MIXING EQUIPMENT Co., Inc.
165-e Mt. Read Blvd., Rochester 11, N.Y.
In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 10, Ont.

▲ For more details circle NED-733 E8 on enclosed inquiry slip ▲

AJUSTRITE® CHAIRS and STOOLS



- Avoids confusion and lost time at start of each period.
- Saves time of supervisors, foremen and maintenance men of adjusting seats for each employee.
- Sturdy construction and special features eliminate maintenance costs—10-year guarantee.

Instantly Adjustable to Meet Individual Requirements

Ajustrite Chairs and Stools enable the worker to instantly adjust the height of the seat, up or down, to suit his individual requirements for correct, comfortable seating posture. No tools are required, no bolts, nuts or screws to loosen, or adjust. User merely lifts the seat to the desired height—the seat holds securely at the point where uplift stops.

32 sizes and models to meet any requirement. 2-way backrest adjustment gives support to stop fatigue. Reduces absenteeism.

Stool Model S1827

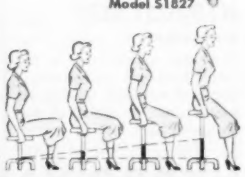
FREE TRIAL

Send for catalog. Choose any model. Try for 30 days (no obligation) the many advantages AJUSTRITE offers.

10-YEAR GUARANTEE

against mechanical failure due to defective material or workmanship.

SPLIT SECOND ADJUSTMENT ... to any Height Desired



AJUSTO EQUIPMENT CO.

515 Conneaut Street • Bowling Green, Ohio

▲ For more details circle NED-734 E8 on enclosed inquiry slip ▲

GET THE FACTS ABOUT Abart SPEED REDUCERS...

—75 types and sizes—spur, worm and combination—ratings from 1/50 to 168 hp.... ratios up to 10,000 to 1. Specials to order.

GEARS...—no stocks—96 pitch to 5/7 D.P.—¼" P.D. to 18" P.D.—custom cut from any gear material.

THIS free DATA-PACKED, 96 PAGE POCKET-SIZE CATALOG

GIVES YOU VALUABLE TECHNICAL INFORMATION ...Yours FREE on request. Write today.

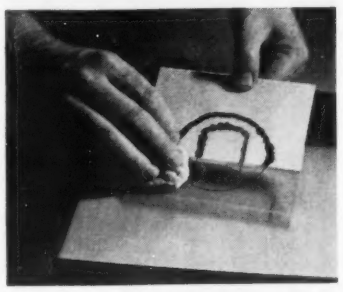
ABART GEAR and MACHINE CO.

Mfrs. of Gears and Speed Reducers

4831 WEST 16th STREET • CHICAGO 50, ILLINOIS

▲ For more details circle NED-735 E8 on enclosed inquiry slip ▲

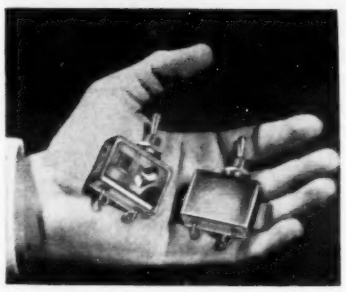
COMPARATOR CHART-GAGES can be produced in any shop



By using Fast-Line coated, 0.05 - in. thick, dimensionally-stable plastic, comparator chart-gages can be produced in any shop. Charts are prepared by scribing the desired layout with standard tools on the plastic. Scribed lines are then brushed over with a dye-like fluid. After dipping in a wash to remove excess fluid and the scribe coating, chart is wiped dry and is ready for use. The finished chart-gage has sharp, black or colored lines impregnated into the plastic and is resistant to wear and abrasion. Fast-Line material is available clear or with matte surface to fit all sizes of optical projectors. Distributed by **Optical Gaging Products, Inc.**, Forbes & Salina Streets, Rochester 11, N. Y.

▲ For more details circle NED-737 E8 on enclosed inquiry slip ▲

CIRCUIT BREAKER subminiature unit weighs 2.1 oz



Stable performance under varying conditions of shock, vibration, and ambient temperature is a feature of the Model SM3 subminiature, hermetically sealed circuit breaker. First of a series, this series-overload-unit weighs only 2.1 oz and is designed for operation at 110 v, 60 or 400 cycles, or for 50 v dc. Ratings from 50 ma to 10 amp are offered with choice of fast or slow overload response time delay curves. Instantaneous trip response is also available. Magnetic actuation and hydraulic time delay are combined to keep current capacity and must-trip points free from ambient temperature effects. The 125-per cent must-trip point is maintained from −65 to 125° C. Made by **Heinemann Electric Co.**, 659 Plum St., Trenton 2, N. J.

▲ For more details circle NED-738 E8 on enclosed inquiry slip ▲

Plastic Vials

Celluplastic Corp.—Stock plastic vials and jars for packaging all types of products are subject of illustrated brochure. Line includes rigid polystyrene vials with ⅜ to 2-in. diameters and lengths to 6 in., extruded flexible acetate and butyrate vials in ½ to 1⅜-in. diameters and almost any length, and squat jars with capacities to 16 oz. Label and trademark imprinting service is described.

▲ For more details circle NED-739 E8 on enclosed inquiry slip ▲

PUMP FLUIDS FROM DRUMS

Faster, Cleaner . . . with the All-Purpose

ALEMITE DRUM PUMP

Fully adjustable air operated delivery of any fluid and semi-fluid material! No mess or waste! No pressure in drum! Adjustable bung adapter fits any drum up to 55-gal. size . . . original drum remains sealed.

For lubricating oil, cutting oil, fuel oil • Pressure gun grease • Alcohol • Asphalt emulsions • Benzine • Carbon tetrachloride • Ethylene glycol • Gasoline Lacquer thinner • Shellac Kerosene • Vegetable oils Alemite Model 7216-A.

Write for free catalog and complete information to:

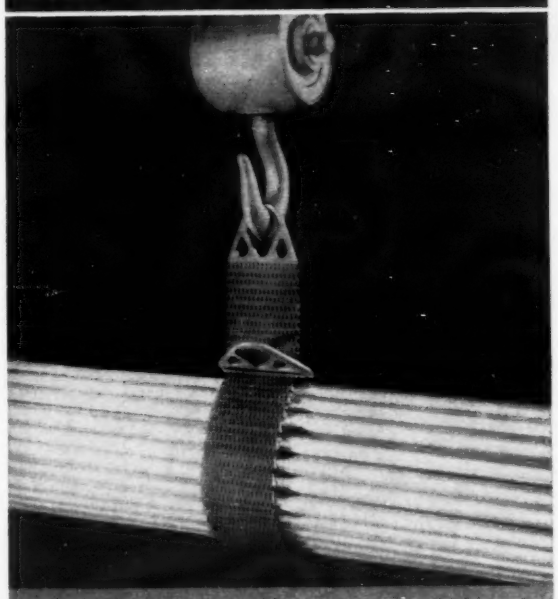
Alemite, Dept. HH-58, 1850 Diversey Parkway, Chicago 14, Illinois

ALEMITE STEWART SW WARNER

Division of STEWART-WARNER CORPORATION

▲ For more details circle NED-740 E8 on enclosed inquiry slip ▲

GRIPPER® woven wire SLINGS



here's FLEXIBILITY for any lifting job

Whether you're handling bulky heat exchanger tube bundles, bar stock or small, irregular loads, Gripper Slings have the flexibility to grip the load snugly, tightly. Easy to rig, they won't whip, kink or tangle. Wide bearing surface gives more load stability . . . prevents the load from slipping or shifting. Woven wire construction means greater safety. Gripper Slings can't snap or tear suddenly and drop the load. Smooth sling surface eliminates load damage.

Gripper Slings, available in standard lengths and widths, are pretested to meet load specifications. Capacities up to 100,000 lbs. Special sizes or alloys available.

See your materials handling, safety equipment or mill supply distributor for a demonstration. Or, write direct for free catalog and name of your nearest distributor.

The Cambridge Wire Cloth Company

WIRE CLOTH | METAL CONVEYOR BELTS | SPECIAL METAL FABRICATIONS

Department AG Cambridge 5, Maryland

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DEALERS: Ask about open territory data.

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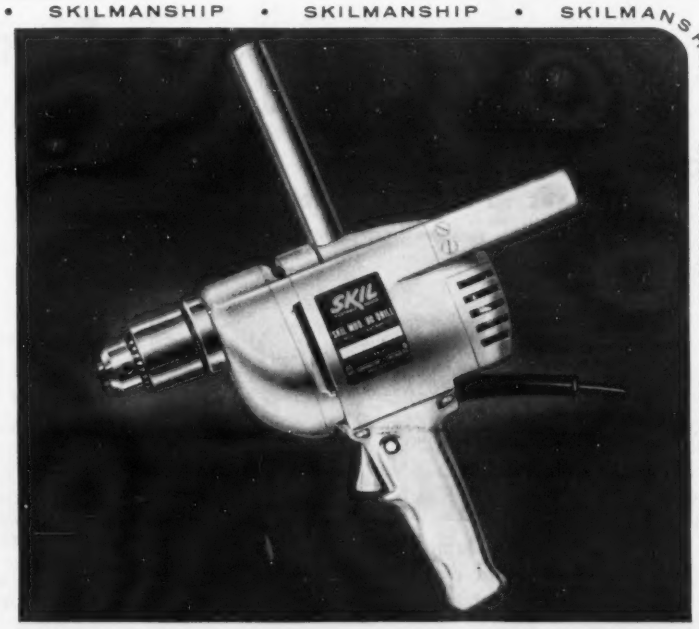
SKILMANSHIP • SKILMANSHIP • SKILMANSHIP • SKILMANSHIP • SKILMANSHIP

SKIL MODEL 80 most compact ½" drill made

compare with any other ½" model

All-new ½" standard duty drill. It's shorter—narrower—lighter than similar competitive models. Built with the most powerful motor available in a unit this size. New handling ease. Weighs only eight pounds! Short length allows operator to drill in spots other ½" drills won't fit. Capacity in steel—½", in wood—1¼". Here is another proof of SKILMANSHIP—the ability of SKIL Corporation to offer you the most compact, most powerful ½" drill available—at no increase in price. See your local distributor for a Proof Test of Model 80.



Made only by SKIL Corporation, manufacturer of famous SKIL and SKILSAW products, 5033 Elston Ave., Chicago 30, Illinois. In Canada: 3601 Dundas Street West, Toronto 9, Ontario.

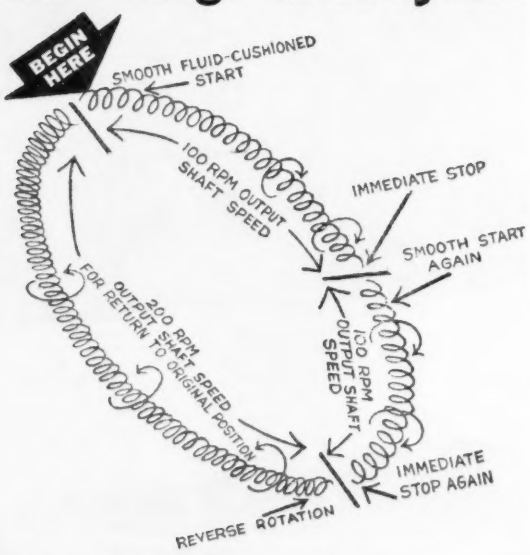
SKIL

SKILMANSHIP • SKILMANSHIP • SKILMANSHIP • SKILMANSHIP • SKILMANSHIP

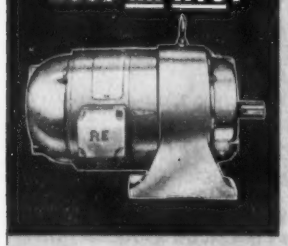
▲ For more details circle NED-736 E8 on enclosed inquiry slip ▲

▲ For more details circle NED-742 E8 on enclosed inquiry slip ▲

How would you solve this 5-stage drive cycle?



This one modern REULAND power package does all five!



Modern Reuland Power represents a whole new concept in electric motors. Today, motors are supplied as complete drive packages...*tailored to the needs of each customer.*

Shown here is a typical demonstration of *Modern Reuland Power.* Contained within this one frame is a fluid coupling ...two-speed reversing duty motor...gear reducer...and magnetic brake.

Would a similar drive *package* help *you?*

OUR NEW GENERAL CATALOG WILL COME IN HANDY—SENT FREE ON REQUEST

Gives details on Reuland's "Xpandable Design" and Free Special-Motor Library. Be sure to get a copy for your files.

REULAND MOTORS

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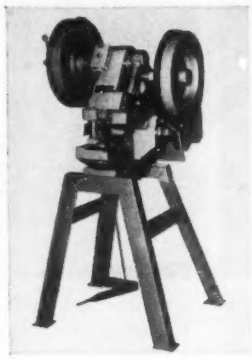
MODERN MOTORS FOR MODERN-DAY PRODUCTS

▲ For more details circle NED-743 E8 on enclosed inquiry slip ▲

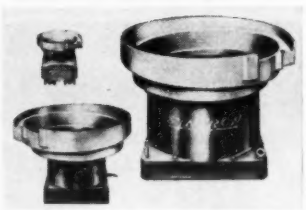
IRON WORKING SHEAR
has holddown for angles and flats



With the hand or foot-operated clutch open, the Bantam Iron Worker shear will make 44 strokes per minute. Machine is equipped with separate holddowns for angles, flats, or punches, and no grinding is necessary after the cut. Standard punches are used on the machine which will punch up to ½-in. hole through ¼-in. material. It has standard and notch blades and an attachment for ornamental iron work or channel and angle cuts. The coper will cope 1¼ in. through ⅛-in. material. Machine has a ¾-hp, 1750-rpm motor and is 56 in. high and 36 in. from floor to blade. Price is $575. Made by **Bateman Foundry & Machine Co.**, Dept. BB, Mineral Wells, Tex.

▲ For more details circle NED-744 E8 on enclosed inquiry slip ▲

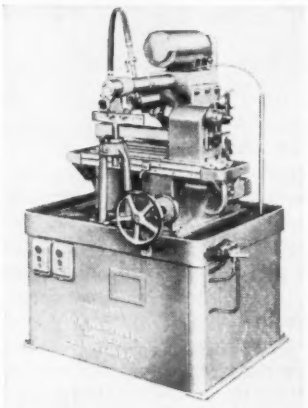
PARTS FEEDERS
5 to 36-in. diameter bowl sizes



Increased power through the use of stronger magnets and a rearranged leaf spring assembly and reduced bowl weights are improvements in line of bowl-type vibratory parts feeders. Larger bowls make possible greater capacities and higher feeding rates. Bowl sizes from 5 to 36-in. diameter are cast aluminum, or cascade or straight-wall stainless or cold-rolled steel. They can be interchanged to orient and feed different parts with the same drive unit. Made by **Syntron Co.**, 405 Lexington Ave., Homer City, Pa.

▲ For more details circle NED-745 E8 on enclosed inquiry slip ▲

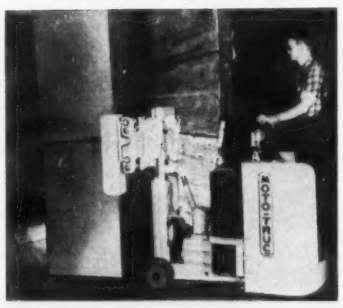
MILLING-GRINDING MACHINE
for production cutting of saw teeth



Hydraulically operated No. 110F automatic saw tooth milling and grinding machine is adaptable for milling teeth on milling cutters, slitting and slotting screw saws, straight flutes in tools such as taps and reamers, special dividing head work, and for grinding saws and other tools. It performs these operations in one setting. Up to 14-in. diameter saws in gangs up to 7 in. long can be milled. Made by **Wardwell Mfg. Co.**, 3805 Ridge Rd., Cleveland 9, Ohio.

▲ For more details circle NED-746 E8 on enclosed inquiry slip ▲

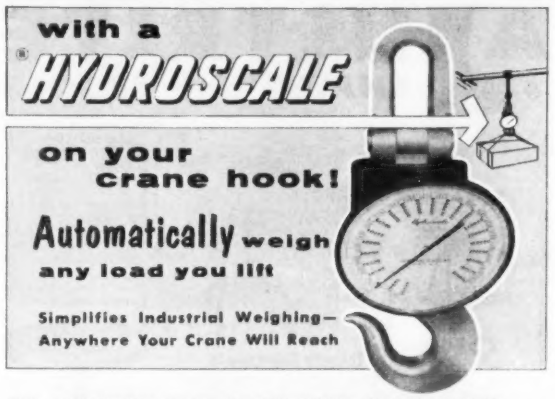
CARTON HANDLER
attaches to Moto-Truc fork trucks



Appliance cartons and other stable shipping containers can be handled in and out of freight cars and highway trucks by a carton clamp with side shifting attachment for Moto-Truc walkie and Ride-A-Man counterbalanced fork trucks. Clamp arms are short and thin for close stacking and easy maneuvering in confined areas. Adequate clamping area is provided to pick up loads safety without damaging containers. Clamp is operated by a pair of double-acting hydraulic cylinders, powered by the lift and tilt mechanism power supply. Truck shown is for loading only and has only 10-in. lift. Other walkie or rider models for tiering have lifts up to 120 in. Made by **Moto-Truc Co.**, 1961 E. 59th St., Cleveland 3, Ohio.

▲ For more details circle NED-747 E8 on enclosed inquiry slip ▲

with a HYDROSCALE



on your crane hook!

Automatically weigh any load you lift

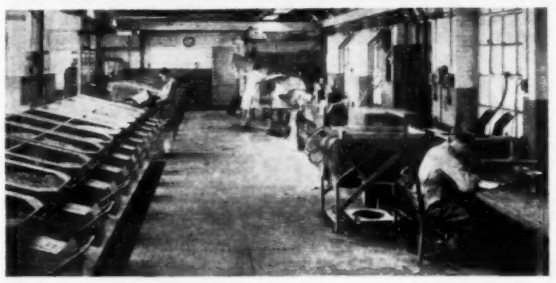
Simplifies Industrial Weighing—Anywhere Your Crane Will Reach

ALL WEIGHING IS DONE ON YOUR CRANE HOOK
ENGINEERED AND BUILT FOR LONG SERVICE-LIFE
THERE ARE 110 MODELS IN THE COMPLETE LINE
TARE ADJUSTING KNOBS FOR NET LOAD READING
EASY-TO-READ DIALS AVAILABLE IN 3 SIZES

HYDROSCALES *guaranteed*
They are guaranteed to be free of defects in workmanship and materials, and to be accurate to ½ of 1% of the maximum dial capacity—

HERE ARE SOME TYPICAL WEIGHING APPLICATIONS
Just a few of the many applications include — loading, unloading, check weighing, batching, foundry charging, and protecting your equipment from overloading.

HYDROWAY SCALES, INC.
31288 Stephenson Highway • Royal Oak, Michigan
"The world's largest producer of crane scales"
▲ For more details circle NED-748 E8 on enclosed inquiry slip ▲



Get your finishing problems solved ...*right here*

To help you find the most effective, lowest cost finishing operations, this big Norton Sample Processing Department uses a wide variety of latest type tumbling equipment — plus Norton TUMBLEX* abrasives, made in four different types A,T,S,N — and many different sizes.

To benefit by these "Touch of Gold" advantages — *which are saving one leading parts manufacturer over $90,000 yearly* — send us your sample metal parts. They'll be returned to you finished to exact requirements, with detailed report. NORTON COMPANY, Worcester 6, Mass.

G-345

NORTON ABRASIVES
Making better products... to make your products better

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

▲ For more details circle NED-749 E8 on enclosed inquiry slip ▲

Extra Powerful 3/8" Drill- just $39.95

New Porter-Cable Drill Features:
Big Drill Performance — Big Chuck Capacity!

Never before a drill with so much power and capacity at this low price!

The new Model 149 is specially designed to do drilling jobs not possible with standard ¼" drills. It features a heavy-duty Universal motor, extra large precision ground gear chuck, man-sized pistol grip, ball bearings and much more. See and try the new Model 149 drill at your dealer's soon. Write for full information.

PORTER-CABLE Machine Company
8125 Marcellus St.
Syracuse 8, New York

Porter-Cable *Quality Power Tools*

saws • drills • sanders • routers • shapers • planes
In Canada: Porter-Cable Ltd., Box 5019, London, Ont. Canadian prices slightly higher.

▲ For more details circle NED-750 E8 on enclosed inquiry slip ▲

...for easier, safer, more economical welding...

The NEW, modern

SuperGrip® ELECTRODE HOLDER

4 MODELS:

A-M Aluminum 300 Amps. 1/4" rod
C-S Copper 250 Amps. 1/32" rod
C-M Copper 300 Amps. 1/4" rod
C-L Copper 500 Amps. 1/4" rod

OUTSTANDING FEATURES:
1. Rugged, long-wearing, interchangeable jaw insulators.
2. Powerful spring for extra "bite" in jaws.
3. Ball-point set screw grips cable for maximum current density.
4. Exclusive "necked-down" handle cuts cable fatigue at handle and cable connection.

Ask for Bulletin No. 65

THE FIBRE-METAL PRODUCTS COMPANY
CHESTER, PENNSYLVANIA
In CANADA: *Fibre-Metal (Canada) Limited, Toronto*

▲ For more details circle NED-751 E8 on enclosed inquiry slip ▲

PRESS OVERLOAD DEVICE
protects against misfeed, doubling

High speed presses and dies can be protected against damage caused by misfeed or doubling of material by the Flexostop safety overload device. If two thicknesses of stock enter the die as a result of a misfeed, the greater-than-normal crankshaft deflection is sensed by the device, and the press is immediately stopped. This added deflection is detected on stock 0.010 in. and heavier. Device is easily wired into the emergency stop circuit of any press with an air clutch. Made by **Precision Welder & Flexopress Corp.**, 3516 Ibsen Ave., Cincinnati 9, Ohio.

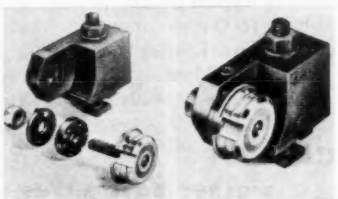
▲ For more details circle NED-754 E8 on enclosed inquiry slip ▲

VOLTAGE AMPLIFIER
for servo, audio, and pulse uses

A 20-decibel, closed-loop, alternating current gain, stable within ±10 per cent from −60 to 160° C, is built into the subminiature Model 207S high temperature transistor voltage amplifier. The medium-gain device has two silicon transistors and only five components. Size is 1/4 x 3/4 x 1 1/4 in. and weight is 0.4 oz. No microphonic noise is observable up to 400 G at 2000 cps. Operation is from a single 28-v power supply. Price is $140. Made by **Taber Instrument Corp.**, Section 16, 111 Goundry St., North Tonawanda, N. Y.

▲ For more details circle NED-755 E8 on enclosed inquiry slip ▲

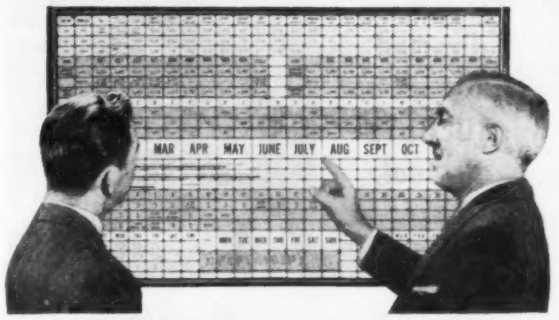
TOOLING FIXTURE
uses small tools in large machines



Adaptool-Post tooling fixture makes it possible to use small, inexpensive form tools in large screw machines with resultant savings in initial tooling and tool inventories. Fixtures also add versatility to the machines by allowing them to handle a variety of work. Line now includes a size range from No. 00 tools adapted to No. 0 machines through No. 2 tools adapted to No. 4 machines. Models for use on Traub A-15 and A-25 machines are also offered. Adaptool-Posts are available for both front and rear cross slides. Tool can be accurately adjusted 30 degrees above or below center. Made by **American Cam Co.**, Dept. N, Box 2106, Hartford, Conn.

▲ For more details circle NED-756 E8 on enclosed inquiry slip ▲

You Get Things Done Better By Seeing What's Happening



BOARDMASTER VISUAL CONTROL

★ Gives Graphic Picture of Your Operations in Color.
★ Facts at a Glance - Saves Time and Prevents Errors.
★ A Simple, Flexible Tool-Easily Adapted to Your Needs.
★ Easy to Use. Type or Write on Cards, Snap on Board.
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★ Compact, Attractive. Made of Metal. 250,000 in Use.

Complete Price $49.50 Including Cards

FREE 24-Page ILLUSTRATED BOOKLET N-400 Without Obligation

GRAPHIC SYSTEMS, 55 West 42nd St., New York 36, N. Y.

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EASTERN PORTABLE MIXERS

Portable mixers provide the thrifty answer to many mixing problems. Versatile Eastern Mixers can be quickly shifted from task to task to allow one mixer to serve many needs. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures, your small investment in an Eastern Portable quickly pays for itself even if your needs are infrequent and varied.

For complete portable mixer information, write for Eastern Bulletin 520-H.

Eastern INDUSTRIES, INC. Regent St., E. Norwalk, Conn.

▲ For more details circle NED-752 E8 on enclosed inquiry slip ▲

Why Is RIDGID The World's Most Popular Pipe Wrench

...because it was a better pipe wrench when first created 35 years ago, and has been improved nearly every year since . . . in performance, design, materials. Today, it is still the most for your money. Buy RIDGID at your Supply House.

The Ridge Tool Company, Elyria, Ohio, U.S.A.

▲ For more details circle NED-758 E8 on enclosed inquiry slip ▲

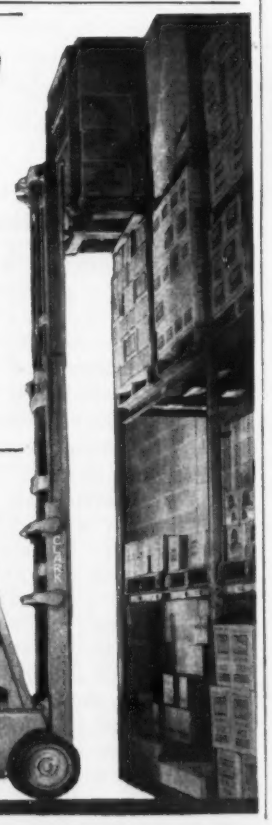
Here's how one Fork Truck can do the work of two With Clark's New TRIPLE STAGE UPRIGHT

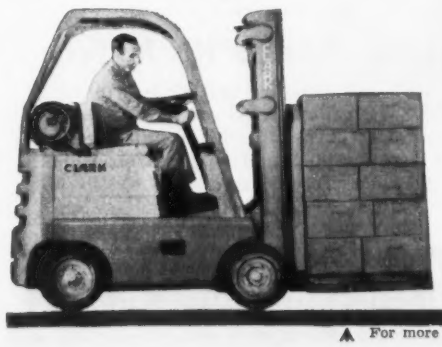
One truck equipped with a Triple Stage Upright will do the work of two trucks . . . with uprights down, your *Clarklift* drives directly into rail cars or highway trucks . . . yet, when the three sections of the Triple Stage Upright are extended—you can stack as high as 18 feet.

The Triple Stage Upright was conceived, designed and developed by Clark Equipment Company and is available on Clark machines in 11 sizes with capacities of 3 to 5 thousand pounds.

For details and specifications simply circle the reader service card or write us direct.

Clarklift is a trademark of Clark Equipment Company





CLARK® EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 21, Michigan

▲ For more details circle NED-753 E8 on enclosed inquiry slip ▲

NO MUSCLES NEEDED!

Air power, directed through a BUCKEYE air tool, makes finishing easy!

There was a time when muscle-power—plenty of it—was needed to finish off a smooth surface. Today, air power has replaced muscles, and modern Buckeye air tools do the job faster, better and more easily.

How about **your** finishing work? Are you doing it the best and most economical way, with modern Buckeye air tools? Catalog A-10 will help you decide; write for your copy—today!

In Air Tools, Your Best Buy Is Buckeye

Buckeye Tools CORPORATION
DIVISION 34 • DAYTON 1, OHIO

▲ For more details circle NED-759 E8 on enclosed inquiry slip ▲

Accidents cost more than

ALCOA ABRASIVE TREAD PLATE

An employee slips on a greasy floor and twists his knee. A severe, chronic inflammatory condition results. Medical costs and Workmen's Compensation total $10,553.77. The employer's accident rate is up. Production time is lost while a new man is trained.

This is just one of 20,000 avoidable slipping accidents in industry every year. Alcoa® Aluminum Abrasive Tread Plate with lasting slip-proof qualities prevents such accidents. Tough particles of fused aluminum oxide in its abrasive surface stay slip-proof even when wet, oily or greasy. It is the only nonskid floor surface that gives you the advantages of corrosion resistance and light weight.

Learn how you can eliminate hazardous conditions on floors, stairs, ramps and other areas. Check the coupon below; write Aluminum Company of America, or call your nearest Alcoa distributor.

Make Your Own 30-Second Safety Test . . . Check the Coupon for FREE Sample of Alcoa Aluminum Abrasive Tread Plate.

ALCOA ALUMINUM

Your Guide . . . to the Best in Aluminum Value

"ALCOA THEATRE"
Exciting Adventure, Alternate Monday Evenings

Alcoa Abrasive Tread Plate gives a safe, sure grip—even when wet, oily or greasy.

Aluminum Company of America
1668-E Alcoa Building
Pittsburgh 19, Pennsylvania

I'd like to see how Alcoa Abrasive Tread Plate prevents slipping. Please send me FREE sample—also application, design and fabricating data.

Name and Title _____
Company _____
Address _____
City and State _____

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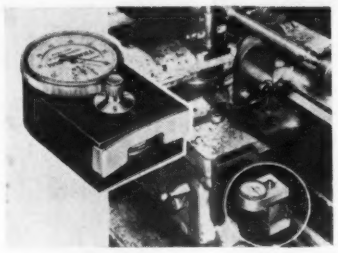
TRAVEL INDICATOR
for use on machine tools



Longitudinal travel of machine tools, as well as transverse and vertical travel on certain machines, can be measured with the Trav-A-Dial indicator. It features infinite travel and reads any length in 6-in. increments, furnishing a visual record in thousandths, hundreds, and full inches on its dial. Accuracy is within 0.001 in. in 6 in. of travel. Lineal measurements on lathes are made without using stops or resorting to other measuring means. Other applications include drilling or boring to location or depth on radial drills and boring machines, step grinding on surface grinders, and picking up lineal dimensions on tool and cutter grinders. Instrument can be retracted when not in use. Made by **M. E. Hodge Corp.**, Dept. NED, 35 N. Raymond Ave., Pasadena 1, Calif.

▲ For more details circle NED-761 E8 on enclosed inquiry slip ▲

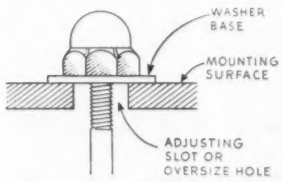
VACUUM PUMP
single unit is rated 65 and 80 cfm

Duplex design, gas-ballasted, single-stage, mechanical vacuum pump is offered in two capacities by varying the horsepower of the driving motor. Model KDH-65 uses a 3-hp, 1800-rpm motor to produce 65 cfm. Model KDH-80 has an output of 80 cfm and is driven by a 5-hp, 1800-rpm motor. Made by **New York Air Brake Co.**, Kinney Mfg. Div., 3529 Washington St., Boston 30, Mass.

▲ For more details circle NED-762 E8 on enclosed inquiry slip ▲

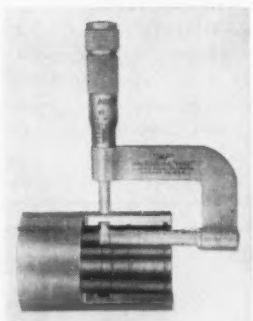
CAP NUT
washer base saves assembly time

Die cast from zinc alloy, this standard, threaded cap nut has an integral washer base. Other than the base, the nut is identical to standard cap nuts. It has a greater seating area, and provides a firmer "grip" on the surface. Use can be on soft surfaces such as plastic, wood, or composition board. Closed-end, 3/8-in., hex size is available from stock. Other sizes and types of washer base, die-cast cap nuts will be offered with all commercial finishes. Samples are available from the manufacturer, **Gries Reproducer Corp.**, Dept. NED, 400 Beechwood Ave., New Rochelle, N. Y.



▲ For more details circle NED-763 E8 on enclosed inquiry slip ▲

INNER-GROOVE MICROMETER
checks depths of internal grooves



Internal O-ring, retaining ring, and recess grooves can be measured and checked as to depth by the IMP inner-groove micrometer. Wall thickness is measured, then the anvil is moved into the groove to obtain the thickness at that location. Difference between the two measurements is the groove depth. Two interchangeable anvils are furnished—one for narrow retaining ring grooves and a wider type for O-ring grooves. Other anvils with widths up to 0.230 in. are available. Grooves can be measured in bores as small as 15/32 in. and to a depth of 2 in. from the face. The standard Lufkin micrometer head has a satin chrome finish and is offered with plain or ratchet cap. Made by **Illinois Metal Products**, Dept. NED, 429 W. Superior St., Chicago 10, Ill.

▲ For more details circle NED-764 E8 on enclosed inquiry slip ▲

Man! This is a cinch with **NU-RAIL** SLIP-ON FITTINGS

- Stair Rails
- Machine Guards
- Safety Railings
- Scaffolding
- Portable Guards

Ask For Bulletin D

No Threading — No Welding

Any man in your shop or maintenance department can build sturdy safety railings with NU-RAIL slip-on fittings and new or used pipe in standard I.P.S. pipe sizes. A hex key and hacksaw are all he needs, because NU-RAIL fittings *slip on* the pipe, and the unique offset design reduces cutting to a minimum. Made of high-tensile aluminum alloy . . . no painting or plating . . . use for temporary railings, too. 100% pipe salvage.

THE HOLLAENDER MANUFACTURING CO.
3841 Spring Grove Ave., Cincinnati 23, Ohio

▲ For more details circle NED-765 E8 on enclosed inquiry slip ▲

feature for feature...
THIS NEW SQUARE D VOLTAGE TESTER
Tops them ALL!

for further details, write Square D Company, 6060 Rivard Street, Detroit 11, Michigan

NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE

SQUARE D COMPANY

▲ For more details circle NED-766 E8 on enclosed inquiry slip ▲

CALDWELL Hoisting Equipment

LIFTEX NYLON SLING

5700 lb. steel crankshaft on two 3" wide Liftex Nylon Slings at Beloit plant, Fairbanks, Morse & Co.

Strong! No Rivets! No Metal!

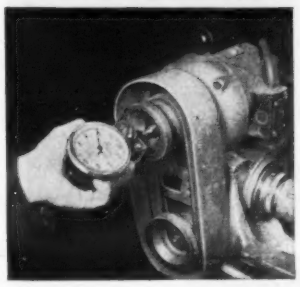
Lifts soft or highly finished materials without scratching. Chemically treated to resist grease, abrasion and many chemicals and solvents. Stock sizes to lift up to 13,500 pounds, special sizes made to order. All with safety factor of 5.

WRITE TODAY FOR BULLETIN R

THE CALDWELL COMPANY, INC.
1123 FOURTH AVE., ROCKFORD, ILL.

▲ For more details circle NED-767 E8 on enclosed inquiry slip ▲

ALL-PURPOSE JONES HAND TACHOMETERS
for quick, easy, instantaneous readings over full 360 degrees of the dial



The Jones portable hand tachometer has many uses in industry. They are light, easy to carry and require no electrical connections. The scale readings are over the full 360° of the dial and are uniformly spaced for easy reading at a glance.

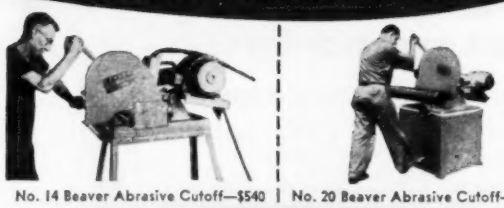
Does not require any special skill — Easy to use even by an unskilled person, the Jones portable hand tachometer features a range selector which is a small knurled knob plainly marked for easy and rapid range change.

Handy, accurate instrument for ready use and trouble shooting—Operators, trouble shooters and inspectors find the Jones portable hand tachometer a great assist as they do their work in automotive service stations, power plants, electric generating stations, oil refineries and many other places where a handy, accurate instrument is desirable. **Write for Bulletin 146-1 or demonstration to:**

JONES MOTROLA CORPORATION
STAMFORD, CONNECTICUT

▲ For more details circle **NED-768 E8** on enclosed inquiry slip ▲

FOR ONLY $540.00
MANY USERS ARE SAVING THOUSANDS OF DOLLARS IN METAL CUTTING COSTS!

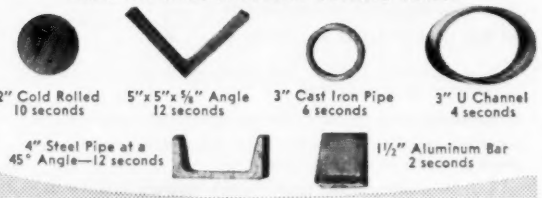


No. 14 Beaver Abrasive Cutoff—$540 | No. 20 Beaver Abrasive Cutoff—$995

OTHER BEAVER ABRASIVE CUTOFF MODELS

Any-Angle Cutoff • Wet Cutoff • Hi-Boy Cutoff • Oscillating-Head Cutoff • Trailer Mounted Cutoff (gas and electric driven)

LOOK AT THESE FABULOUS CUTTING TIMES!



BEAVER PIPE TOOLS —INC.— 373-500 Dana Ave. WARREN, OHIO

Can't Tell It All Here! Write for latest facts on all-new Beaver Machines.

Have a Cutting or Threading Problem? Let Our Engineering Research Department help you solve it.

▲ For more details circle **NED-769 E8** on enclosed inquiry slip ▲

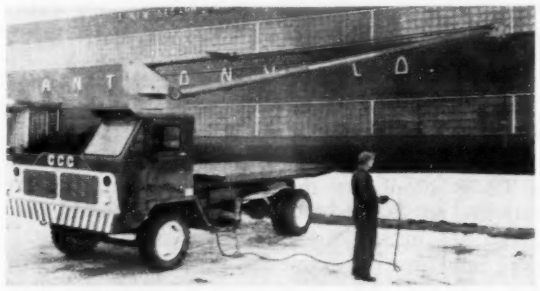
STEEL TAPE RULE
offered in 10-ft model

This 10-ft, steel blade Pocket tape, now available to contractors, engineers, builders and other rule users, complements the 50 and 100-ft models made by company. It has a chrome-plated case and a white blade with black markings. One edge is marked in tenths and hundredths of a foot, the other in inches and eighths. Offered in a plastic utility box, tape retails for $1.98. Made by **Evans Rule Co.**, Dept. NED, 400-416 Trumbull St., Elizabeth, N. J.

▲ For more details circle **NED-771 E8** on enclosed inquiry slip ▲

TRUCK CRANE
operable remotely by one man

Readily installed on any truck, this 5000-lb capacity, remote-controlled truck crane fits in an 18-in. mounting space. Boom swings 280 degrees, and the high pivot



point clears heavy loads over the cab. Hydraulic power is provided by take-off from truck's transmission. Accurate load positioning is possible. Made by **Anthony Co.**, 1651 Baker St., Streator, Ill.

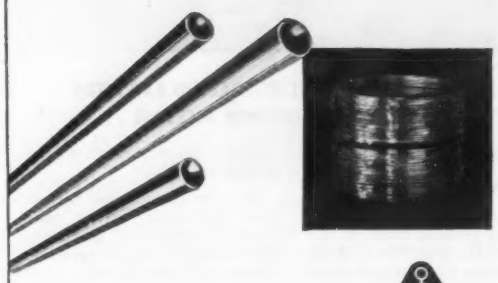
▲ For more details circle **NED-772 E8** on enclosed inquiry slip ▲

UTILITY PUMP
is self-priming and engine-driven

Available in 1½ and 2-in. models, these Utility pumps are powered by recoil start, air-cooled, Briggs & Stratton gasoline engines. Diffuser priming system assures rapid priming with minimum of water in the case. They are designed for ease of service, and shock-mount feet can be provided for use on hard surfaces. Light in weight, they can be carried to job with center-of-balance handle. Made by **Bell & Gossett Co.**, Marlow Pumps Div., Greenwood Avenue, Midland Park, N. J.

▲ For more details circle **NED-773 E8** on enclosed inquiry slip ▲

LOOKING FOR LONG-LENGTH COILS OF ALUMINUM OR COPPER TUBE?



WRITE

MADE IN U.S.A. TO THE STANDARDS OF AMERICAN INDUSTRY

WOLVERINE TUBE
DIVISION OF CALUMET & HECLA, INC.
17266 Southfield Road
Allen Park, Michigan
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

▲ For more details circle **NED-774 E8** on enclosed inquiry slip ▲

Are you STUMPED
FOR THE RIGHT TOGGLE CLAMP?...

Got a tough work-holding job that's bothering you . . . one which needs quick-acting and powerful clamping?

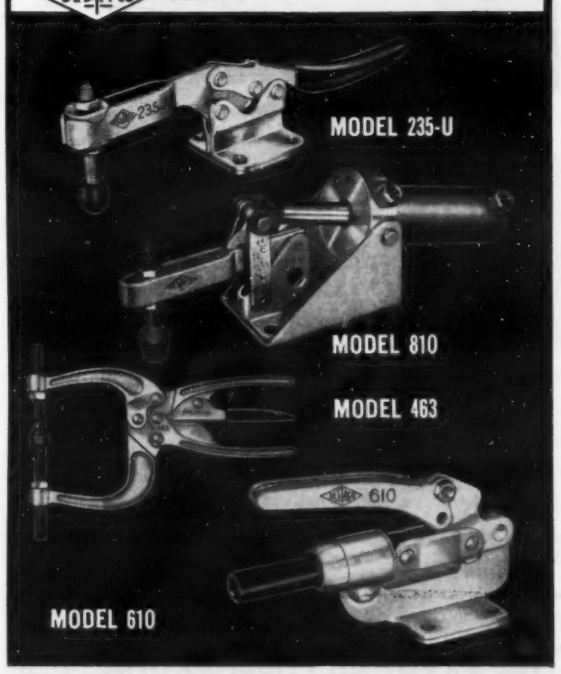
It's 100 to 1 you'll find the answer among 120 standard DE-STA-CO Toggle Clamps and scores of spindle accessories.

Even more! Our engineers will give you suggestions if you send a print or rough sketch.

And there's a DE-STA-CO Stocking Distributor nearby.

Our 40-page DE-STA-CO Catalog is yours for a postcard or letter

DE-STA-CO **4 TYPICAL CLAMPS**

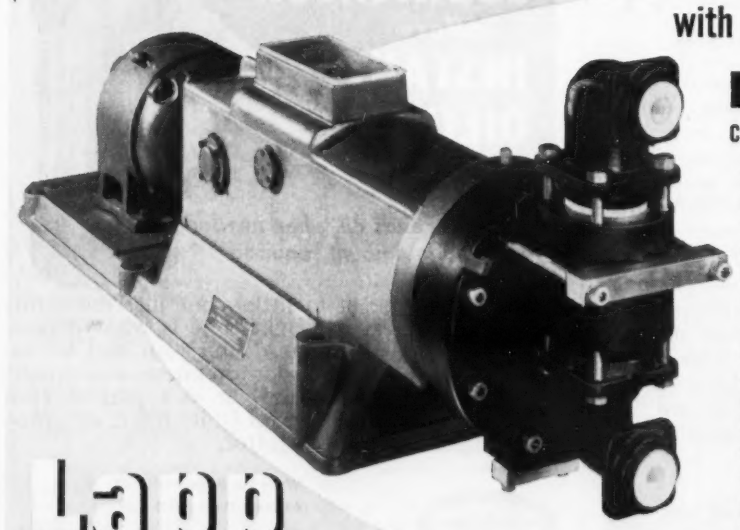


DETROIT STAMPING COMPANY
Manufacturer of America's FIRST Line of TOGGLE CLAMPS
360 Midland Avenue
Detroit 3, Michigan

Try... DE-STA-CO **TOGGLE CLAMPS**

▲ For more details circle **NED-775 E8** on enclosed inquiry slip ▲

Precise Metering of Corrosive Chemicals
with Lapp PULSAFEEDER
CONTROLLED-VOLUME CHEMICAL PUMP

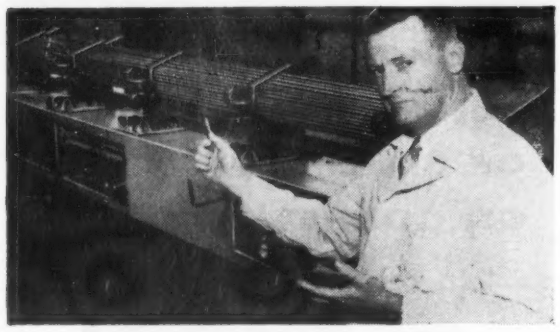


Working with hard-to-handle liquids is routine for the Pulsafeeder. Designed for this kind of work, the Pulsafeeder combines the better features of piston and diaphragm pumps for controlled-volume pumping, eliminating the need for a stuffing box or other leak-likely seal. When the job requires, special corrosion-resistant liquid ends of non-metallic construction are used (illustrated). Parts of solid Lapp Chemical Porcelain, alumina ceramic, and Teflon plastic are combined to assure trouble-free, positive-displacement metering of corrosive chemicals.

WRITE *for Bulletin 440 which gives complete specifications on the full line of Pulsafeeder Pumps. Lapp Insulator Co., Inc., Process Equipment Division, 3302 Poplar St., Le Roy, N. Y.*

Lapp PULSAFEEDER

▲ For more details circle **NED-770 E8** on enclosed inquiry slip ▲



LIPE AUTOMATIC MAGAZINE-LOADING BAR FEEDS GUARANTEE 30% PRODUCTION INCREASE . . .

Find out how much more you can get!

Actual case histories offered by present users of the Lipe AML Bar Feed show production increase of *over* 200%! With figures like these you can visualize what man-hour savings may be produced. Owners realize significant material waste reductions, too.

If your production set-up uses automatic screw machines, centerless grinders, turret lathes, punch presses, thread rollers, shears, etc., write or wire for a FREE Lipe Sales Engineering estimate. For folder and complete details contact Dept. BF.

Lipe-ROLLWAY CORPORATION SYRACUSE 1, N. Y.

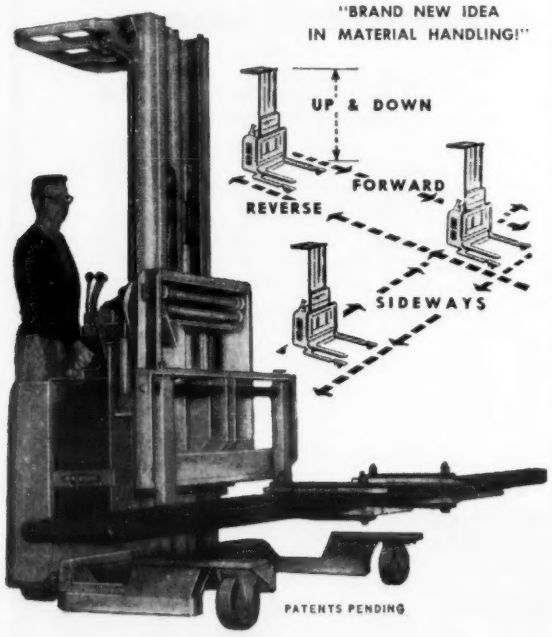
MACHINE TOOLS • HEAVY-DUTY AUTOMOTIVE CLUTCHES • PORTABLE POWER HACK SAWS

For more details circle NED-776 E8 on enclosed inquiry slip

RAYMOND FOUR DIRECTIONAL

4-D ELECTRIC TRUCK

"BRAND NEW IDEA IN MATERIAL HANDLING!"



move LONG material in NARROW aisles

Bar stock, rods, sheet steel, pipe, tubing, assemblies, carpeting, or any long material is easily handled by the Raymond 4-D Electric Truck . . . up or down . . . forwards . . . backwards . . . or sideways down a narrow aisle. You have to see it to believe it.

MAIL COUPON TODAY

The RAYMOND CORPORATION
4162 Madison St., Greene, New York

Please send Bulletin describing four directional Electric Truck

NAME TITLE
COMPANY
STREET
CITY STATE

For more details circle NED-777 E8 on enclosed inquiry slip

New Literature and Catalogs

System Thermometers

Minneapolis-Honeywell Regulator Co., Industrial Div.—56-page Catalog C60-2 describes line of Brown rectangular case indicating, recording, and controlling filled-system thermometers. Vapor, gas, and mercury actuated thermometers and thermal systems for use between limits of −125 to 1000° F are listed, along with separable wells and other accessories.

For more details circle NED-778 E8 on enclosed inquiry slip

Care of Wooden Pallets

"Care for Wooden Pallets Can Control Maintenance Costs to You" is title of 16-page booklet intended as a guide in preventing damage to wooden pallets during use. It explains how to get the most out of wooden pallets in industrial operations and offers nine rules for proper pallet care. When and how to repair pallets is covered as well. Write National Wooden Pallet Manufacturers Association, 609 Barr Bldg., Washington 6, D. C.

For more details circle NED-779 E8 on enclosed inquiry slip

Timing Belt Drives

Morse Chain Co.—68-page timing belt drive Catalog TB-58 affords for the first time engineering information on five basic belt pitches—1/5, 3/8, 1/2, 7/8, and 1 1/4 in. Information covers selection, installation, and use of these positive, lubrication-free drives. Typical uses range from business machines and instrumentation through high-torque applications in heavy industrial equipment.

For more details circle NED-780 E8 on enclosed inquiry slip

Venturi Meter Tubes

Builders-Providence, Inc.—32-page Engineering Bulletin 110-PI descriptively covers various types of Venturi tubes, their recovery characteristics, formulas that determine their design, and typical calculations. It discusses all aspects of Venturi design, installation, economics of Venturi metering, various accessories available, and complete specifications.

For more details circle NED-781 E8 on enclosed inquiry slip

Electrical Connectors

Pyle-National Co.—The Pyle-Star-Line of compact, environment-resistant electrical connectors is described and specified in 62-page Bulletin 1252-1. Covered is the Series W designed to exceed military environmental and performance requirements and the Series C (circuit breaking) connectors for portable and detachable industrial electrical equipment. Ratings of latter are 30, 60, 100, and 200 amp at 600 v ac.

For more details circle NED-782 E8 on enclosed inquiry slip

Cyclone Separators

Heyl & Patterson, Inc.—Tables and graphs in 16-page Brochure 1157 give performance data on all models of H & P cyclones for slurry thickening, slurry classification, water clarification, and recovery of suspended solids. It covers models from the 3-in. cyclone rated 10 to 15 gpm at 40 psi feed pressure to the 24-in. cyclone with 1200 to 2000 gpm rating at 20 psi feed pressure.

For more details circle NED-783 E8 on enclosed inquiry slip

Rubberized Abrasives

Cratex Mfg. Co.—What Cratex rubberized abrasives are, how they are used, and what they can do in precision manufacturing operations on tools, dies, molds, instruments, and component parts are told in 8-page industrial Catalog 228. Abrasives are offered in the form of wheels, points, blocks, sticks, and cones.

For more details circle NED-784 E8 on enclosed inquiry slip

Stamped & Formed Components

Be Cu Mfg. Co.—Background of this company as a producer of miniature and subminiature stamped and formed components and parts made from special alloys and metals is outlined in 4-page illustrated brochure. Its equipment and facilities are described.

For more details circle NED-785 E8 on enclosed inquiry slip

Steel-Cutting Carbide

Vascoloy-Ramet Corp.—V-R 75, a shock and heat resistant grade of carbide for heavy turning, facing, boring, and milling of alloy steels, is subject of 12-page Bulletin 5712. Carbide is available in full length inserts, throwaway inserts, standard blanks and most styles of standard tools.

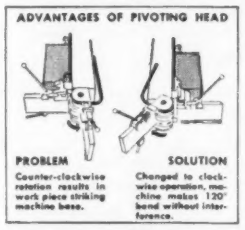
For more details circle NED-786 E8 on enclosed inquiry slip

SPEEDS BENDING ODD SHAPED PARTS ...TUBING, PIPE, EXTRUSIONS, ETC.

Pines Model 1400 with extended base, handles 10 ft. lengths of tubing over mandrel. Standard machine takes 4 x 8 ft. floor space.

PINES 2-IN-1 Bender

ADVANTAGES OF PIVOTING HEAD



New Model 1400 Handles Both Clockwise and Counter-Clockwise Operations . . .

For experimental, small lot, and production work, Pines Model 1400 Bender offers outstanding advantages. Designed with double tool-holder ways and a pivoting head assembly, you can handle multiple planes and odd shapes fast and efficiently. Change-overs from clockwise to counter-clockwise operation can be made in about two minutes. Designed for handling bars, rolled shapes, extrusions, and tubing up to 1 1/4" O.D., the machine features economical, quick-change tooling, smooth, hydraulic operation, and degree-of-bend turret selector. Typical production speed is 300 to 400 bends per hour.

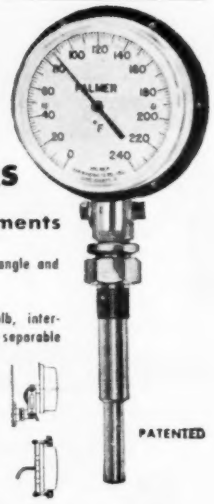
PINES ENGINEERING CO., INC. Specialists in Tube Fabricating Machinery 640 WALNUT • AURORA, ILLINOIS

WRITE FOR NEW CATALOG . . . Gives latest information, specifications, and production and tooling data.

PRODUCTION BENDING • DEBURRING • CHAMFERING MACHINERY

For more details circle NED-787 E8 on enclosed inquiry slip

PALMER MERCURY ACTUATED DIAL THERMOMETERS



in 3 types to suit any requirements

Full 4½" dial face. Stem can be placed at any angle and case can be rotated to any readable position.

1 Rigid Stem Dial Thermometer tapered bulb, interchangeable with standard industrial thermometer separable socket. (As illustrated above.)

2 Wall Mounted Dial Thermometer with flexible connecting armor. Case adjustable to easy reading position.

3 Flush Mounted Dial Thermometer for panel mounting with flexible connecting armor.

All three types have a full 4½" dial face.

PATENTED

for accuracy: Mercury actuated . . . Fully Compensated by Invar Compensation. Guaranteed Accurate 1 scale division.

for angularity: Can be adjusted to most readable position at any angle desired.

for readability: Bold Black Numbers . . . 11" of scale Reading Dial face can always be placed in easiest readable position.

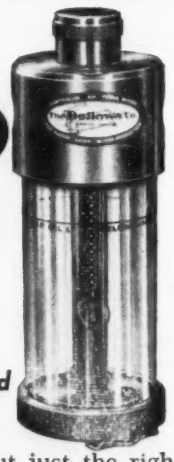
for interchangeability: Always specify "PALMER" Separable sockets as they are interchangeable for Dial or Industrial type Thermometers.

WRITE FOR CATALOG INFORMATION

PALMER THERMOMETERS, INC., Cincinnati 12, Ohio
Mfrs. of Industrial Laboratory Recording and Dial Thermometers

For more details circle NED-788 E8 on enclosed inquiry slip

AIRLINE LUBRICATOR* offers INSTANT OILING



Feeds oil when needed in amount required

Not too much, not to little—but just the right amount of oil at the right time is what makes the Bellows Air Line Lubricator your best bet to keep maintenance costs low on pneumatic equipment. Available separately or as a part of The Bellows "Lubri-Air" Control Unit: filter, air pressure regulator, and lubricator.

*Patented.

Write for Bulletin CU 20.
Address Dept. NED-558.

1007-B

The Bellows Co.
DIVISION INTERNATIONAL BASIC ECONOMY CORPORATION
AKRON 9, OHIO

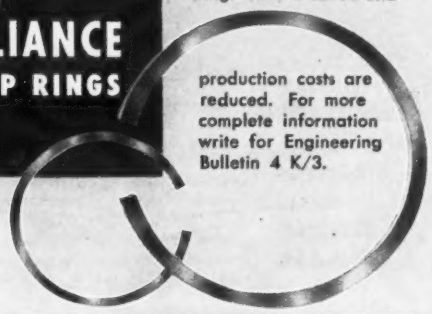
For more details circle NED-789 E8 on enclosed inquiry slip

SHOULDERS FORMED

Faster Easier Better

with RELIANCE SNAP RINGS

In the case of machining shoulders on shafts or in counterbores, material that goes into "sweepings" can be expensive. Reliance Snap Rings allow you to order shafts and seamless tubing to size. Machining is then limited to only one narrow groove for the snap ring. Time is saved and production costs are reduced. For more complete information write for Engineering Bulletin 4 K/3.



EATON — RELIANCE DIVISION — MANUFACTURING COMPANY
509 CHARLES AVE. • MASSILLON, OHIO

SALES OFFICES: NEW YORK • CLEVELAND • DETROIT
CHICAGO • ST. LOUIS • SAN FRANCISCO • MONTREAL

For more details circle NED-790 E8 on enclosed inquiry slip

POR-ROK (POUR ROCK)

Fast Setting Cement

PERMANENTLY ANCHORS BOLTS IN CONCRETE WITHIN 30 MINUTES!

Securely fastening machinery, hand rails, seats, fixtures or any type of equipment to concrete by means of anchor bolts can now be done quickly, easily and safely with Por-Rok Quick Setting Cement.

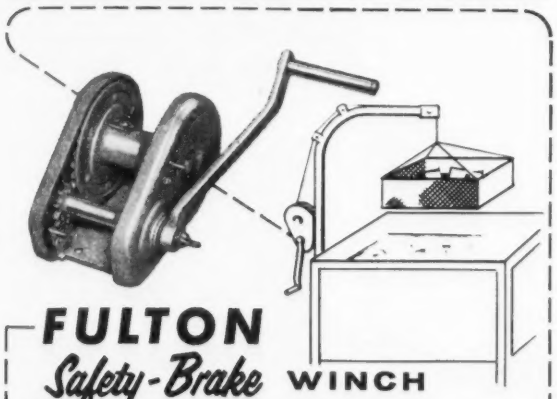
Por-Rok successfully replaces lead and sulphur, and costs considerably less. Applied cold, there is no heating hazard. Simply mix Por-Rok powder with water and pour around bolt. Within 30 minutes the cement sets hard and the bolt is anchored permanently.

Por-Rok also makes quick, lasting repairs to holes and breaks in concrete floors with little or no interruption to normal traffic. It is self-bonding, self-leveling, oil-resistant, does not shrink. Compression strength of 4500 lbs. p.s.i. in one hour GUARANTEED.

For complete information—without obligation—write

THE HALLEMITE MFG. CO.
2452 WEST 25th ST. • CLEVELAND 13, OHIO SINCE 1927

For more details circle NED-791 E8 on enclosed inquiry slip



FULTON Safety-Brake WINCH

This revolutionary new winch gives complete *one-hand* control of the load at all times. Automatic load-actuated brake safely holds the load whenever the winch handle is released, whether raising or lowering.

Precision stamped gears are concealed to protect operator. Oil-impregnated high pressure powdered iron bearings assure long service life. Easily disassembled for servicing. Model 254, gear ratio 3:1, safe working load 395 pounds, maximum capacity 1000 pounds. Drum has 1¾" hub, holds up to 85 feet ¼" cable.

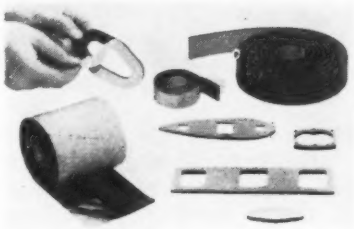
You'll find many cost-saving applications for the Fulton Safety-Brake winch in your plant. It's economically priced. For complete information on this and other models of Fulton pressed steel winches from 200 to 1800 pounds capacity, write for catalog.

the FULTON CO. 1912 S. 82nd St. Milwaukee 19, Wis.

For more details circle NED-792 E8 on enclosed inquiry slip

New Processes and Materials

RUBBER & SYNTHETIC PARTS have two types of adhesive backings



Adhesive-backed rubber and synthetic parts such as shown are clean and easy to handle and can be placed quickly and accurately in position. They adhere well to a wide variety of surfaces. "Wet" type precemented surface is covered with holland cloth. It is used by peeling off this protective covering and placing the part in position. The "dry" type has no covering and is used by moistening the dry cemented surface with a solvent such as toluol, naphtha, carbon tetrachloride, or thinner. Parts are made to specifications by **Mechanical Rubber Products Co.**, 35 Vail Rd., Warwick, N. Y.

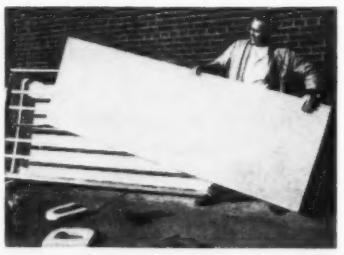
For more details circle NED-793 E8 on enclosed inquiry slip

LAYOUT FLUID assures high-contrast scribed lines

Lines scribed through this improved Layout Fluid have a pronounced contrast, relieving eye strain and allowing accurate working to desired layout. Fluid can be used on steel and cast iron for layout, as well as on brass, aluminum, stainless steel, tin, and copper. Surface is simply wiped clean and fluid is brushed on. It dries instantly. Fluid is packaged in 4-oz, pint, quart, gallon, and 55-gal drum containers and is made in purple, black, white, yellow, red, green, brown, and orange colors. Made by **Dayton Rogers Mfg. Co.**, 2822 13th Ave. S., Minneapolis 7, Minn.

For more details circle NED-794 E8 on enclosed inquiry slip

CORRUGATED ACRYLIC SHEET standard lengths up to 96 in.



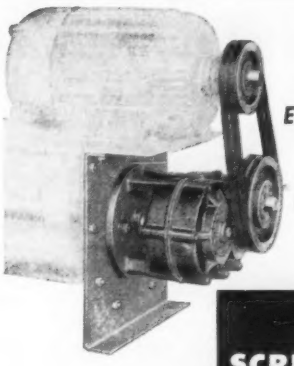
Extruded acrylic plastic sheet, now available in corrugated form, is lower in cost than cast sheet, but equal in optical, weathering, and chemical properties. Standard widths of 35½ in. have interlocking edges so that they can be linked to any width desired. The corrugated ridges are flat and ⅜-in. wide. Standard lengths of 36, 48, 72, and 96 in. are stocked, and lengths up to 25 ft can be ordered. Standard colors are white in two degrees of translucency; other colors are special. Made by **Cadillac Plastic & Chemical Co.**, Dept. NED, 15111 Second Ave., Detroit 3, Mich.

For more details circle NED-795 E8 on enclosed inquiry slip

WATER REPELLENT seals wood doors, sills, stoops

Tough, flexible Doorcote water repellent epoxy coating for wooden doors seals water and dampness out in wet climates and retards drying out and cracking in dry climates. Coating outlasts paint and varnish 10 to 1 under extreme conditions and is impervious to grease, acids, and alkalies. It can be brushed or sprayed over raw wood, oil varnish, or painted surfaces with equal success. Coating is available in half-pints, pints, and quarts from **Carl H. Biggs Co.**, Dept. 730, 2255 Barry Ave., Los Angeles 64, Calif.

For more details circle NED-796 E8 on enclosed inquiry slip



Entirely New!

Entirely Different!

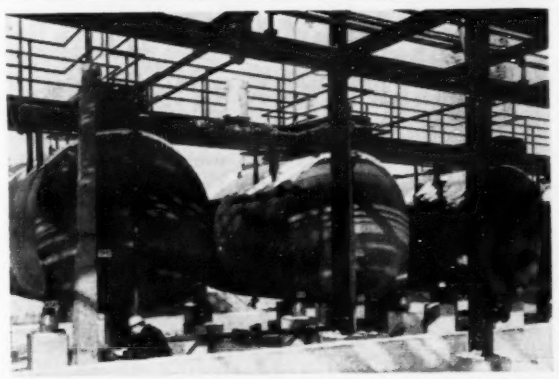
DODGE SCREW CONVEYOR DRIVE

A complete package drive, including (1) rugged, high efficiency reducer — Timken Bearing equipped throughout, (2) quick-removable driving shaft, (3) external packing gland, (4) trough end, optional. Provides amazing new ease of installation—new ease of maintenance—new economy. No motor base—no thrust bearing. Ask your Dodge Distributor or write us for technical bulletin.

DODGE MANUFACTURING CORPORATION, 2100 Union St., Mishawaka, Ind.

DODGE of Mishawaka, Ind.

For more details circle NED-797 E8 on enclosed inquiry slip



Glassed-steel storage tanks for corrosives

Your product storage cannot *corrode* glass.* Glass cannot *contaminate* your product.

So what's more natural for your acids and alkalies, distilled water, flavors, dyes, or what-have-you than *glassed-steel* Chemstor tanks.

Glassed steel is easy to clean, too. Sticky materials can't cling.

Store from 500 to 35,000 gallons either horizontally or vertically. Cost is low: as little as 29¢ per gallon in the larger sizes. Tank openings arranged to suit your needs.

Write Dept. NED-58 for descriptive literature.

*Excepting hydrofluoric acid.

THE PFAUDLER CO.
a division of PFAUDLER PERMUTIT INC., Rochester 3, New York

For more details circle NED-798 E8 on enclosed inquiry slip

Rockwood Cold Forged

STEEL UNIONS

NOW, Color-Coded for Positive Identification

Now Rockwood makes identification easy for pipe fitters and warehouse personnel.

Rockwood Unions offer you 4 different seats — for all general piping requirements — approved by Underwriters' Laboratories, Inc. for use in handling flammable liquids. Only Rockwood Unions are 100% inhibited against corrosion. Threads are "Rockwoodized" and seats are made of non-corrosive material and are sold off standard Black Steel price list. All parts are completely interchangeable. Write for full information and take your choice.

Nut-Gray — Type 601 . . . Silicon Bronze Seats . . . Eliminates corrosion, electrolytic action and dezincification of seat joint. Withstands higher temperatures than ordinary bronze or brass. Perfect for chemical, steel, rubber, paper and textile industries!

Nut-Black — Type 602 . . . 2 Stainless Steel Seats . . . Where carbon steel pipe is used and severe temperature or acid conditions are prevalent — eliminates necessity of an all stainless steel union.

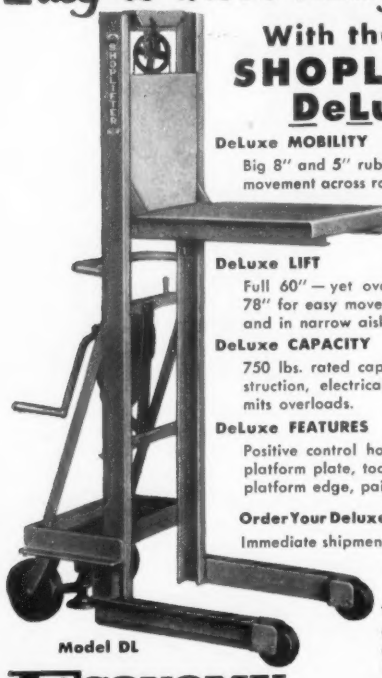
Nut-Olive Drab — Type 603 . . . Moly Steel Seats . . . Offers extra strength, toughness and resistance against corrosion and provides Hardness Differential. The male seat is specially heat treated to give it a greater hardness than the female seat.

Nut-Gray — Type 604 . . . Moly to Silicon Bronze Seats Combines the advantage of types 601 and 603.

ROCKWOOD SPRINKLER COMPANY
2452 Harlow Street, Worcester 5, Mass.
Distributors in all principal industrial areas

For more details circle NED-799 E8 on enclosed inquiry slip

Easy to move heavy loads



With the New
SHOPLIFTER DeLuxe

DeLuxe MOBILITY
Big 8" and 5" rubber wheels for easy movement across rough floors and also protection for finished floors.

DeLuxe LIFT
Full 60" — yet overall height is only 78" for easy movement thru doorways and in narrow aisles.

DeLuxe CAPACITY
750 lbs. rated capacity. All steel construction, electrically arc-welded permits overloads.

DeLuxe FEATURES
Positive control hoist unit, backguard platform plate, tool tray, turned-down platform edge, painted safety orange.

Order Your Deluxe Shoplifter Today!
Immediate shipment from factory stock.

Price: $280.00 f.o.b. Chicago

Ten-day free trial, if desired, with full credit return privilege.

Model DL

ECONOMY ENGINEERING
4519 W. Lake St.
Chicago 24, Ill.

For more details circle NED-800 E8 on enclosed inquiry slip

HOW TO MAKE YOUR STORAGE EQUIPMENT PAY FOR ITSELF!

Get more into less space and cut handling time with F-G-M Storage Planning and save the cost of your storage equipment many times over.

Up to 75% savings in floor space have been realized in F-G-M-planned storage areas using Rotabins and other F-G-M Shelving.

Ask Frick-Gallagher how F-G-M Planning can save manpower, provide greater accessibility in less space, and reduce your factory costs. Write for FREE copy of Brochure 700-A on "How to Double Your Warehouse Capacity."

4-3 The FRICK-GALLAGHER Mfg. Co.
112 S. Michigan Avenue
WELLSTON, OHIO © 1958
BONDERIZED STEEL EQUIPMENT FOR EVERY STORAGE NEED

For more details circle NED-801 E8 on enclosed inquiry slip

NEW LITHCOTE CATALOG
TELLS HOW TO SOLVE CORROSION AND CONTAMINATION PROBLEMS AT LESS COST

Far more than a "product" bulletin. Lists actual applications in food, pharmaceutical, process, chemical, petroleum and transportation industries. Illustrates both large and small applications. Complete data on Lithcote line of protective linings and coatings.

LITHCOTE your application source for
AMERCOAT, BISONITE, COLUMBIA #7, COPON, PLASITE, UNICHROME, KEL-F

LITHCOTE CORPORATION
5000 W. Lake Street, Melrose Park, Illinois
42 Belden Avenue, Norwalk, Conn.
36 W. 44th Street, New York 36, N. Y.

For more details circle NED-802 E8 on enclosed inquiry slip

New Literature & Catalogs

Standard Worm & Gear Mounting

Michigan Tool Co., Cone-Drive Gears Div.—20-page Bulletin 750-C describes standard worm and gear mountings for standard Cone-Drive gear sets having center distances from 2 through 18 in. Ratings range from fractional to 665 hp with worm speed as high as 2400 rpm. Assemblies are suitable for either single or double-extended shafts and for worm over, worm under, or gear shaft vertical installations.

For more details circle NED-803 E8 on enclosed inquiry slip

Plastics Resins

United States Rubber Co., Naugatuck Chemical Div.—Application and physical property data on all plastics produced by this division are condensed in 8-page resin guide. Covered are seven types of Kralastic, a resin-rubber blend that can be extruded and injection molded; seven types of Vibrin polyester resin used in reinforced plastic molding, cements, and putties; and twelve types of Marvinol vinyl resins used in calendering, extrusion, coating, plastisol compounding, and foams.

For more details circle NED-804 E8 on enclosed inquiry slip

Ventilating Fan Units

General Blower Co.—"Lungs for Industry" is title of 24-page Bulletin UVS-104 describing line of belt-driven ventilating units with either forward curve wheels or backward blade nonoverloading wheels. Engineering data and specifications cover 12 basic size packaged units ranging in capacity from 688 to 23,000 cfm.

For more details circle NED-805 E8 on enclosed inquiry slip

Steam Generator

Erie City Iron Works—Baffleless, pressurized, two-drum, packaged water tube steam generator is described in illustrated 12-page Catalog SB-59. The integrated unit requires no field piping, wiring, brickwork, or special foundation. Specifications are given on oil or gas-fired units with capacities of 5000 to 60,000 lb/hr of steam.

For more details circle NED-806 E8 on enclosed inquiry slip

Electromechanical Breadboard Parts

Helipot Corp.—24-page Catalog 575 includes over 50 photos and dimensional drawings of 117 standard Beckman electromechanical breadboard parts. Specifications of such basic parts as grid plates, shaft and component hangers, shaft couplings and hardware, shafting, magnetic clutches, and ball and disc integrators are included.

For more details circle NED-807 E8 on enclosed inquiry slip

Special Alloys

Carpenter Steel Co.—Engineering properties and fabrication characteristics of a range of special alloys for electronic, magnetic, and electrical applications are detailed in 64-page illustrated bulletin. Technical information covers physical constants, mechanical properties, working instructions, heat treatment, and corrosion resistance.

For more details circle NED-808 E8 on enclosed inquiry slip

Molded & Extruded Plastic Parts

Pipco International Corp.—Extensive series of injection molded and extruded plastic parts is subject of illustrated "New Parts Bulletin 501." Specifications and prices are given for plug closures, cap closures, wire tips, bumpers, spacers, bearings, gears, rollers, and various other parts of various materials.

For more details circle NED-809 E8 on enclosed inquiry slip

High Temperature Tubing

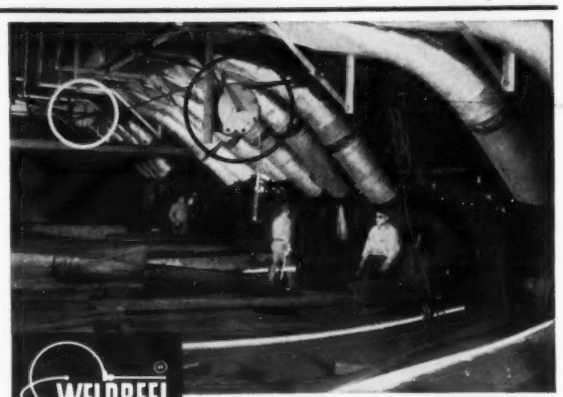
Superior Tube Co.—Small diameter super alloy tubing for applications requiring high strength at high temperatures is described in Bulletin 70. Materials listed will not rupture under a stress load of 25,000 psi at 1200° F during a 1000-hr test. Chemical composition, physical and mechanical properties, and production limits for 16 alloys are shown.

For more details circle NED-810 E8 on enclosed inquiry slip

Coating Resins

Allied Chemical & Dye Corp., Barrett Div.—Plaskon coating resins used in the manufacture of protective and decorative coatings, varnishes, lacquers, printing inks, and other products are subject of 24-page illustrated brochure. Descriptions, performance characteristics, and test data are included for oil-modified alkyd coating resins, rosin and phenolic-modified alkyds, and alkyd co-polymers, among others.

For more details circle NED-811 E8 on enclosed inquiry slip



WELDREEL

Welding Hose and Cable Reels

INLAND STEEL COMPANY'S Chicago Heights, Illinois, mill has installed WELDREEL reels in their rolling department where plate is cut to size. Here, with the strictest safety precautions being observed, the area is kept free of cutting torch hose except when it is in use.

The WELDREEL MODEL OA-A units retract the hose onto strong spring powered reels, and permit it to be paid out easily as needed. Hose life is greatly extended—plant operations are made more efficient—better, safer housekeeping is maintained.

WELDREEL reels are available with capacities from 40 to 150 feet of dual hose and up to 100 feet of cable.

UNITED SPECIALTIES, INC.
P. O. BOX 698 EL DORADO, ARKANSAS

For more details circle NED-812 E8 on enclosed inquiry slip

ATLANTIC WHEELS

cut work fatigue to a man-saving minimum!

Atlantic Grinding Wheels have a smooth, floating action that requires less grinding pressure, keeps operators fresher for longer periods. You can depend on their rugged resinoid bond for maximum on-the-job safety.

A trial run in your plant will quickly prove their worth. Have an Atlantic representative recommend the right wheel for you. Meanwhile, write for your free copy of the Atlantic Grinding Wheel Catalog.

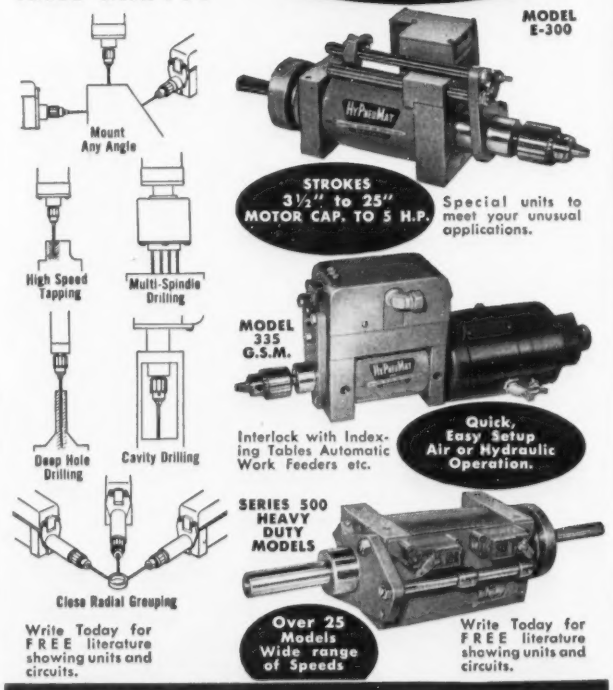
Atlantic Abrasive Corp.
A DIVISION OF ABRASIVE PRODUCTS, INC.
South Braintree 85, Massachusetts

STRAIGHT WHEELS • CYLINDER WHEELS • CUP WHEELS
CONES • PLUGS • MOUNTED WHEELS AND POINTS

For more details circle NED-813 E8 on enclosed inquiry slip

Short Cut operations like these with . . .

HYPNEUMAT *Automatic* DRILLING AND TAPPING UNITS



Write Today for FREE literature showing units and circuits.

Write Today for FREE literature showing units and circuits.

HYPNEUMAT, INC. 647 W. Virginia Street, Milwaukee, Wis.

For more details circle NED-814 E8 on enclosed inquiry slip

TRENT PACKAGED CIRCULATION HEATERS

for Water, Oil, Brine, Air and Various Gases

- Water—Superheat
- Oil, Oil Burners, Heat Transfer Liquids
- Brine, Defrost Applications
- Air, to High Temperatures—Test Work
- Gases, Hydrogen, Nitrogen, etc.

The unique design of TRENT "Packaged" Circulation Heaters *eliminates* return bends in the heating tubes . . . to assure free, uninterrupted flow of liquid through the heater—at the *exact* velocity you require! This means faster, more efficient heating for all types of process equipment.

TRENT SOH Oil Circulation Heater
TRENT SWH Water Circulation Heater
furnished fully equipped with

- All-Welded Companion Pipe Assemblies with Insulation
- Indicating or Non-Indicating Thermostats for High Temperatures
- Rugged Outer Casings with Mounting Tabs
- TRENT Multi-Tube Flanged Immersion Heater Unit
- Mounted 6" square Terminal Box

Let a TRENT engineer determine the TRENT "Packaged" Circulation Heater best suited for your operation . . . or custom-engineer one to meet your special wattage and voltage requirements.

TRENT INC. Electrically Heated Industrial Equipment
251 LEVERINGTON AVE., PHILA. 27, PA.
In Canada Supreme Power Supplies Limited, Toronto 14

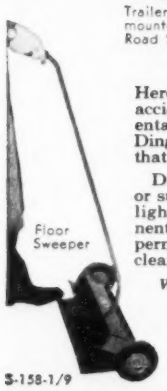
For more details circle NED-815 E8 on enclosed inquiry slip

PICK UP DANGEROUS METAL

from

• Parking lots • Factory floors and aisles • Storage yards • Driveways • Docks • Inter-plant roadways • Railway sidings • Airport runways and aprons

with DINGS Magnetic Sweepers



Here's the easy, economical way to prevent accidents to men and equipment. Pick up foot-entangling or tire-puncturing metal with the Dings non-electric Magnetic Sweeper model that best fits your needs.

Dings Road Sweepers, either trailer-mounted or suspended from any mobile equipment, are lightweight, waterproof, guaranteed permanent. Dings Floor Sweepers, also guaranteed permanent, are newly designed for quick, easy cleaning.

Write for Bulletins 1210-A-4 and B-1302-A today.

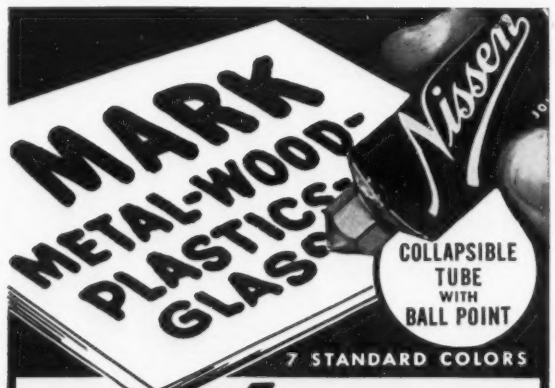
DINGS MAGNETIC SEPARATOR CO.
4758 W. Electric Ave.
Milwaukee 46, Wisc.

Dings

S-158-1/9

For more details circle NED-816 E8 on enclosed inquiry slip

MARK METAL-WOOD-PLASTICS-GLASS



WITH THE Nissen MARKER

A handy, easy-to-use, ball-point marker for coding, numbering, marking on metal, wood, plastic and glass—smooth or rough surfaces. The tube contains a special, fast drying *opaque* ink that withstands heat and weathering under adverse conditions and will not chip, peel, fade or rub off.

Three different size ball points are available for making fine or broad lines—as illustrated.

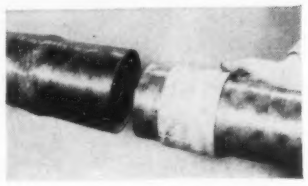
Line 5/64" Thick
Line 1/8" Thick
Line 3/16" Thick

JOHN P. NISSEN, JR. CO., *Manufacturers*
GLENSIDE, PA.

For more details circle NED-817 E8 on enclosed inquiry slip

New Processes & Materials

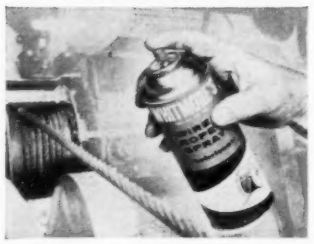
REINFORCED PLASTIC PIPE made in 2 to 12-in. diameters



Plain, bell and spigot, or flanged ends are available in Bondstrand corrosion resistant, reinforced plastic pipe. It is available in 2 to 12-in. diameters in rigid 20-ft lengths for piping, tubing, and duct applications. Other lengths and diameters up to 40 in. are available on special order. Pipe is nontoxic, nonflammable, and collapse-resistant, and does not sag or cold flow in use. Most petroleum and chemical products, sewage, industrial wastes and gases, fresh and salt water, food, and pharmaceuticals can be handled. Types with nominal working pressures of 250 and 500 psi have a 10-to-1 safety factor. Higher pressure ratings are also offered. Pipe is easily cut and joined in the field. Various fittings are made of the same material. Made by **Amercoat Corp.**, Dept. ND, 4809 Firestone Blvd., South Gate, Calif.

For more details circle NED-818 E8 on enclosed inquiry slip

WIRE ROPE LUBRICANT packaged in 16-oz. aerosol container



Applications of Whitmore's wire rope spray lubricant penetrate to the rope core to minimize internal friction and thus increase rope life. It is packaged in a 16-oz aerosol container. Product will prevent rust and corrosion of wire rope and cable and is nongumming. It can be used on industrial, mining, materials handling, and construction equipment. A free sample can will be sent. Made by **Whitmore Mfg. Co.**, Dept. NED, Cleveland 4, Ohio.

For more details circle NED-819 E8 on enclosed inquiry slip

RUST PREVENTIVE water soluble product for indoor use

Thinned with three to seven parts of water, Protect-O-Metal No. 299 rust preventive will protect metal parts in indoor storage for 2 years or more. It deposits a thin, transparent, polar film which remains soft after the water evaporates. Coating will not reemulsify after drying and will not wash off with water or condensation. Its "wetting" property allows application to uncleaned or porous metals and parts for complete coverage. Product is noninflammable, practically odorless, and nontoxic. It need not be removed prior to secondary machining operations or painting. Made by **G. W. Smith & Sons, Inc.**, 1702 Spaulding Rd., Dayton 32, Ohio.

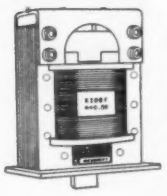
For more details circle NED-820 E8 on enclosed inquiry slip

FLOOR PATCH & CRACK FILLER highly resistant to indentation

Exceptional trowelability, improved modulus of rupture, and high resistance to indentation are characteristics of Filmix powdered plastic floor patch and crack filler. Uses include filling cracks in brick, tile, plaster; and gaps around sinks, plumbing, and wiring. It can be used to patch concrete; to set loose tiles, screws, locks, handles, and casters; tighten joints and rungs; and to replace rotted wood. Original uses were as a resilient top flooring and for filling cracks or gaps prior to sanding and finishing. Mixed with water until workable, Filmix dries in 1 to 2 hours. It can be sanded, stained, or painted, and mixes easily with dry colors. Filmix is offered in 10, 25, 50, and 100-lb bags by **Selby, Battersby & Co.**, Dept. NED, 5210 Whitby Ave., Philadelphia 43, Pa.

For more details circle NED-821 E8 on enclosed inquiry slip

NAMCO SOLENOIDS



A full line of standard and custom made Solenoids for AC or DC use. Push or pull types with capacities up to 25 lbs.

FREE BOOKLET AVAILABLE

Write for your free copy of booklet EM-52. It provides a wealth of information about the application, design and installation of both custom and standard Namco Solenoids.

Electrical Manufacturing Division
National Acme
The National Acme Company, 182 E. 131st St., Cleveland 8, Ohio

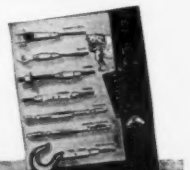
For more details circle NED-822 E8 on enclosed inquiry slip

LARGE OR SMALL
SHORT OR TALL
Electroline Fittings
ARE THE CHOICE OF ALL

There's an Electroline Wire Rope Fitting to suit your every need. Actual tests have proved their great holding power in all applications, regardless of size or type.

Electroline Fittings are installed easily and safely with ordinary tools—by unskilled labor in a matter of minutes—without the danger of molten metal or acids—without blow torches or special tools.

To give you the whole story of Electroline Wire Rope Fittings, we have prepared a pocket-size illustrated catalog, filled with information of sizes and types. Why not send for your copy today?



Electroline COMPANY
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

For more details circle NED-823 E8 on enclosed inquiry slip

get the facts about forgings...

from the world's largest producer of brass, bronze and aluminum forgings . . .

MUELLER BRASS CO.
PORT HURON 37, MICHIGAN

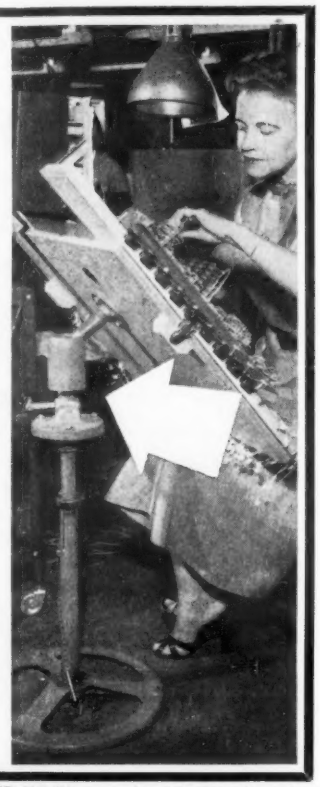
195

Please send me a copy of your ENGINEERING MANUAL H-58565

NAME _____
COMPANY _____
ADDRESS _____

For more details circle NED-824 E8 on enclosed inquiry slip

POWRARM IN . . . PRODUCTION UP! UP! UP!



FRIDEN INCREASES WORKER EFFICIENCY WITH PowRarm! By using Wilton PowRarm Work Positioners as the basic unit of adjustable assembly boards, **Friden increased production through a savings of operator time, motion, and assembly space.** PowRarms allow 360 degrees rotation of the new boards, and workers can incline them at various angles. May be mounted on benches, conveyors, or floor stands as illustrated. Many firms use PowRarm for inspection, servicing, soldering, assembly, and any work positioning operation. Ask your Wilton distributor for a demonstration.

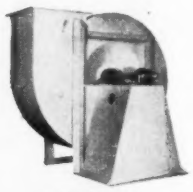
WRITE FOR FREE 52 PAGE CATALOG!

WILTON TOOL MFG. CO., INC.
Schiller Park, Ill.

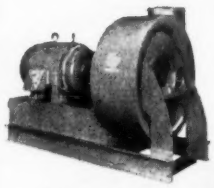
Sold by leading distributors the world over!
NED-58

▲ For more details circle NED-825 E8 on enclosed inquiry slip ▲

*WEATHERPROOF VENTILATING SETS 100 CFM to 23,000 CFM Both belted and direct drive Bulletin UVS 104

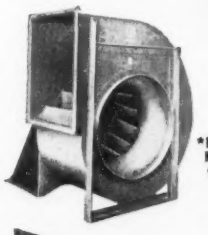


INDUSTRIAL EXHAUSTERS 200 to 55,000 CFM Bulletin MX 104R



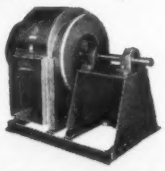
TURBO BLOWERS 4 oz. to 48 oz. 70 CFM to 6,000 CFM Bulletin TB 109

GENERAL BLOWER MECHANICAL LUNGS FOR INDUSTRY



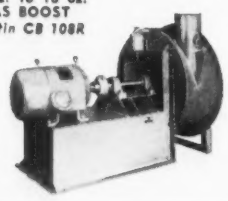
*BACKWARD BLADE NON-OVERLOADING CENTRIFUGAL FAN Wheel size 12" to 72" Bulletin BB 102

FUME EXHAUSTERS



DURA-TEMP HEAT FANS 3 wheel types to 1650° F. Bulletin TB 109

GAS BOOSTER 1.4 oz. to 18 oz. GAS BOOST Bulletin CB 108R



*FORWARD CURVE EXHAUSTERS Low speed ventilation. Efficient and quiet. Bulletin FC-101

HEAT FANS CENTRIFUGAL FANS CLASSES I-II-III-IV ALLOY STEEL TEMPERATURE RANGES TO 1600°

*Certified ratings authorized by NAFM.

Over 20 years of engineering and manufacturing experience

AMERICA BREATHES EASIER with "Lungs for Industry"

GENERAL BLOWER COMPANY
8613 FERRIS AVE., MORTON GROVE, ILL.

▲ For more details circle NED-826 E8 on enclosed inquiry slip ▲

New Literature & Catalogs

Industrial Ladders & Scaffolds

White Metal Rolling & Stamping Corp.—More than 100 sizes and lengths, in 14 lightweight magnesium ladder types, are listed and priced in 4-page bulletin. Also described are planks, platforms, scaffolding, and accessories for maintenance and construction work. One-third lighter than aluminum, ladders are strong, fireproof, corrosion resistant, and shock resistant. List prices range from $9.98 for a 26-in. junior stepladder to $6 per ft for a 72-ft 4-in. side rail, three-section, extension ladder.

▲ For more details circle NED-827 E8 on enclosed inquiry slip ▲

Cold Roll Forming Techniques

Yoder Co.—"Cold Roll Forming" is the title of an 88-page reference manual which tells how to produce a wide variety of metal shapes. Such subjects as production costs, operating speeds, tooling, surface finish, forming of precoated stock, personnel training, and operating techniques are discussed. Special operations involved in producing tubular, structural, and ornamental shapes are described. Also covered are methods of curving, coiling, ring-forming, notching, perforating, welding, and embossing.

▲ For more details circle NED-828 E8 on enclosed inquiry slip ▲

Low-Cost Plug Gages

Dundick Tool Works, Inc.—Made to exacting standards, Supreme Dundick plug gages are available in reversible steel, Taperlock AGD, Trilock AGD, chrome carbide, and tungsten carbide types. Complete specifications and prices of thousands of sizes are cited in 16-page Catalog 58. Also described are reversible gage blanks and holders.

▲ For more details circle NED-829 E8 on enclosed inquiry slip ▲

Mills, Reamers & Deburring Cutters

Severance Tool Industries Inc.—Thousands of high speed and carbide cutting tools are described and list prices are given in 44-page Catalog 23. Specifications are given on fast-finishing Midget Mills and Chatter-Free seating tools. Sizes and shapes are available to suit practically any operation ranging from tube chamfer removal to die sinking.

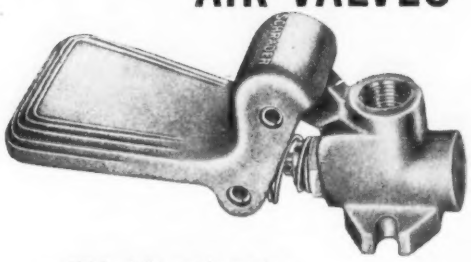
▲ For more details circle NED-830 E8 on enclosed inquiry slip ▲

How to Fabricate Stainless

"Stainless Steel Fabrication" is title of 386-page manual which offers guidance on the techniques of fabricating stainless steel. Chapter headings include cutting, joining, cold forming, hot forming, machining, heat treating, surface treating, and other operations. This handbook contains 140 tables, 120 charts, 200 special diagrams, and 30 special reference tables relating to stainless steel and its application or fabrication. Book is available only by writing on your company letterhead to Allegheny Ludlum Steel Corp., Advertising Dept., Oliver Bldg., Pittsburgh 22, Pa.

▲ For more details circle NED-831 E8 on enclosed inquiry slip ▲

NEW TWO AND THREE-WAY FOOT-OPERATED AIR VALVES



. . . With right angle ports
. . . Mount directly on floor surface.
. . . Give convenience and control with simplest installation

Feature a rugged brass body with heavy lugs for two-bolt mounting in convenient position for easy foot operation. Pedal returns to actuating position by spring action. Excellent for designing air hookups requiring a compact two or three-way foot valve. 3/8" N.P.T. ports. All parts corrosion resistant and readily accessible for service. Flow capacity: 75 cu. ft.

Informative literature available on this and all your air control needs. Schrader makes more quality air products than any other manufacturer in the world.

Schrader®

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
459 Vanderbilt Avenue, Brooklyn 38, N. Y.

▲ For more details circle NED-833 E8 on enclosed inquiry slip ▲

modernize with HydroLectric

A GREAT NAME IN LIFT TRUCKS

STUEBING *Designed Engineered Built*

- Two driving wheels instead of one
- Braking with handle in any position
- Automatic parking brake (optional)
- Sealed alloy gears instead of chains
- Sealed ball-bearing rollers in masts
- 100% more steering ease with two wheel drive
- Power unit removal complete in 20 minutes
- Greater tire capacity equivalent load ratings

The only truck with 2 driving wheels and 2 braking systems. In fact Hydrolectric does everything a good lift truck should do.

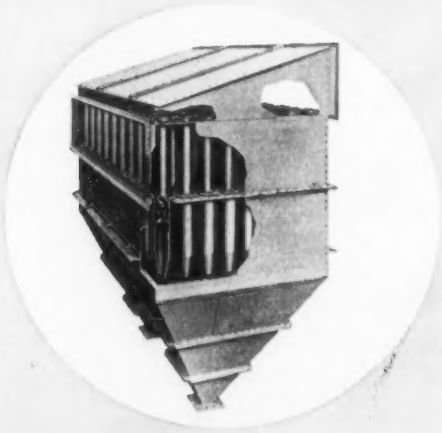
LIFT TRUCKS, INC.
2423 Spring Grove Ave.
Cincinnati 14, Ohio

There is a truck for every purpose to handle any kind of material.

▲ For more details circle NED-834 E8 on enclosed inquiry slip ▲

LOWER COST Dust Collection AT HIGHER EFFICIENCY

Greater gas flow per tube, fewer tubes per collector, lower pressure loss — this means lower total cost for a given capacity and efficiency. • Before you buy, write for Bulletin CY, which shows how you can cut dust collecting costs with Cyclo-trell mechanical collectors.



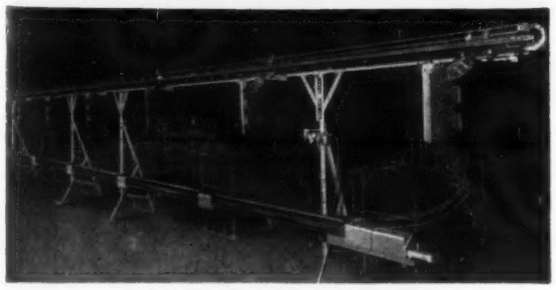
CYCLO-TRELL

RESEARCH-COTTRELL

RESEARCH-COTTRELL, INC. • Main Office and Plant: Bound Brook, N. J. • 405 Lexington Ave., New York 17, N. Y. • Grant Building, Pittsburgh 19, Pa. • 228 N. La Salle St., Chicago 1, Ill. • 58 Sutter Street, San Francisco 4, Cal. • Research-Cottrell (Canada) Ltd., 33 Bloor Street East, Toronto 5, Ontario.

RC182

▲ For more details circle NED-832 E8 on enclosed inquiry slip ▲



NOW—'Standard' Equipment for . . .

AUTOMATIC PARTS DISTRIBUTION

No longer does your parts handling have to be expensively custom-engineered. For instance, this rugged high-capacity parts distributing system can be readily adapted to your parts, your output. It's one of Gear-O-Mation's latest—a production-line supply system that both stores and demand feeds. Can be supplied in lengths, stations, capacity to suit your need. Like the other parts-handling equipment from G-O-M, it's pre-engineered to cost you less.

Bulletin 572 completely describes the new parts distributing system. Write for it.

Automation by... GEAR-O-MATION
DIVISION OF MICHIGAN TOOL COMPANY
7171 E. McNICHOLS RD. • DETROIT 12, MICH.

▲ For more details circle NED-835 E8 on enclosed inquiry slip ▲

MODELS INTEREST YOU?

Scale models, that is!

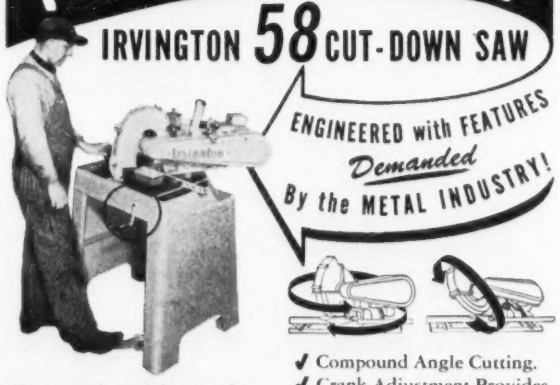
Models are rapidly replacing templates, to get better and faster plant layouts. Reproductions of the layout are made by photography. We can model part or all of your plant (building, machines, benches, etc.) for 2¢-4¢/sq.ft. depending on congestion and size.
Scales: 1/8, 3/16, 1/4, 1/2" to the foot.

Industrial Models, Inc.
(A team of engineers and craftsmen)
2110 Sconset Road, Wilmington 3, Delaware
New York — Cleveland — Pittsburgh — Chicago
New Orleans — Houston — Los Angeles — Detroit
The Hague, Holland — Manchester, England
Caracas, Venezuela

▲ For more details circle NED-836 E8 on enclosed inquiry slip ▲

New! Different!

IRVINGTON 58 CUT-DOWN SAW



ENGINEERED with FEATURES Demanded By the METAL INDUSTRY!

Now—make straight cuts, mitres or compound angle cuts with absolute precision. Ruggedly built for long life, hairline accuracy.

- ✓ Compound Angle Cutting.
- ✓ Crank Adjustment Provides Fast Precision Control for Angle Cutting.
- ✓ Large Diameter Arbor, Oversize Bearings for Long-Life and Hairline Accuracy.
- ✓ Positive Drive—15 Speed Combinations.
- ✓ Wide Speed Range: 1100-5000 RPM for All Types of Work.
- ✓ More Capacity: 12-inch Saw.
- ✓ Ideal for Light Metals or Abrasive Cutting.

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Portland 12, Oregon
Phone: Atlantic 4-1187
3 Colfax N. E.
Grand Rapids 5, Michigan
Phone: GLendale 1-0184

▲ For more details circle NED-837 E8 on enclosed inquiry slip ▲

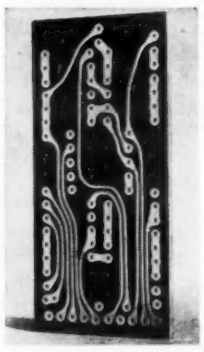
New Processes & Materials

GLASS FIBER ROOFING resists cold flow up to 140° F

Composed of millions of glass fibers that prevent movement of the asphalt cover and sagging or pulling away from high spots at temperatures up to 140° F, Fibre Glass Supercote roof coating is usable over felt, composition, tin, corrugated iron, concrete, and built-up roofs. It is formulated of plasticizers and waterproofing oils which penetrate and resaturate dried out roofing felts and also bond to old surface. It is applied as it comes from the container with a brush or squeegee. Made by **Garland Co.**, Dept. C-62, 3748 E. 91st St., Cleveland 5, Ohio.

▲ For more details circle NED-838 E8 on enclosed inquiry slip ▲

PRINTED CIRCUIT BOARDS made of chemically machinable glass



Capable of continuous operation at 250° C without sagging or warping, these copper-metallized printed circuit boards are automatically produced of Fotoceram, a chemically machinable glass with a flexural strength of 25,000 psi. The first Corning - made boards with through-hole plating, they are for missile, communication system, control and measuring instrument, and radar use. The 1/8-in. runs and through-hole plating show no blisters, lifting, or metal failure after a 5-min immersion in solder at 500° F. The boards have high base-to-metal strength that will resist repeated soldering of components without damage. Made by **Corning Glass Works**, Dept. 21, Box 544, Corning, N. Y.

▲ For more details circle NED-839 E8 on enclosed inquiry slip ▲

CEMENT SAMPLER KIT for bonding all types of materials

Service, Pli - O - Bond, acrylic, Bakelite, Vinylite, grille cloth, model, plastic, wood, rubber-to-metal, electrical and resistor, Neoprene, label, and vinyl cements are contained in this sampler kit of 14 adhesives to aid in solving bonding problems. They are particularly suited for research, development, and experimental use in industry. Each 2-oz bottle has its own applicator in the lid. All of these cements are available commercially in containers ranging up to 55 gal. Kit is priced at $9.95. Offered by **General Cement Mfg. Co.**, Adhesive Div., Dept. NED, 400 S. Wyman St., Rockford, Ill.

▲ For more details circle NED-840 E8 on enclosed inquiry slip ▲

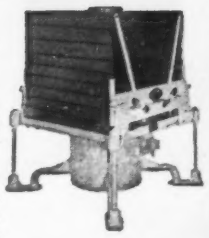
LIQUID BRICK CLEANER safer and easier to use than acid

Packaged conveniently in a plastic container with a self-contained pouring spout and handle, Liquid Brick Bath is easy to use and will not harm workman. Container is virtually unbreakable and is further protected by a corrugated box. Liquid will dissolve as much mortar as acid, and it will quickly remove mortar stain. It is offered in sample 1-qt container for $1.59 and up to 55-gal drums for $98.30. Made by **Goldblatt Tool Co.**, Dept. AB, 1910 Walnut St., Kansas City 8, Mo.

▲ For more details circle NED-841 E8 on enclosed inquiry slip ▲

Sifts huge volumes with Big Savings in Floor Space

RICHMOND SPROUT-WALDRON
Gyro-Whip SIFTER



Noted for huge output, amazingly compact design, and sanitary operation, these sifters are available in sizes ranging from 3-sieve, floor-mounted models to free-swinging super-sifters with 180 sieves. Stainless steel and wood construction. Can sift from 2 mesh up to 325 mesh. They handle any product that can be mechanically separated. Aspirator tips to air wash graded products can be provided.

Write for Bulletin 135-A

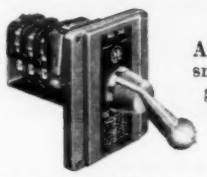
Other Sprout-Waldron size classification equipment includes revolving reels, shaking and gyrating screens, air and magnetic separators, and graders. Write for details.

SPROUT-WALDRON
Manufacturing Engineers Since 1866
LOGAN STREET • MUNCY, PA.
EQUIPMENT FOR SIZE REDUCTION—MIXING & BLENDING — BULK MATERIALS HANDLING — PELLETING & CUBING — PRODUCT CLASSIFICATION

IN/502

▲ For more details circle NED-842 E8 on enclosed inquiry slip ▲

MODERNLY STYLED BULLETIN 350 REVERSING DRUM SWITCH



A compact, low cost switch for small a.c. or d.c. motors. Ruggedly built for long, trouble-free life. Wrap-around cover and front mounted terminals make wiring easy! Can be changed to maintained or momentary contacts in a few seconds. Maximum rating—2 horsepower.

Can be furnished for "OILTIGHT" CAVITY MOUNTING

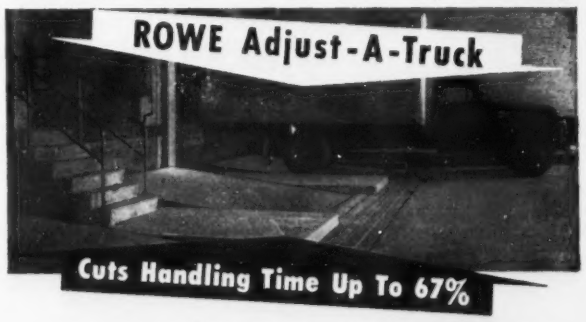
Allen-Bradley Co.
1334 S. Second St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

A-B

ALLEN-BRADLEY
MOTOR CONTROL
QUALITY

▲ For more details circle NED-843 E8 on enclosed inquiry slip ▲

Move Greater Pay Loads . . . Faster, Safer With Money Saving



. . . Saves Man Hours And Dock Space

■ Here's the low cost answer to positioning any highway carrier to proper dock height when it is impossible to use dock leveling ramps because of construction or space limitation. This 40,000 lb.-capacity hydraulic truck leveling device has 24" up-down travel and features: Low Initial, Installation and Operating Cost • Short Amortization Period • Rugged Construction for Long-Life Service • Minimum Maintenance • Exceptional Ease of Operation.

Write for our new folder—it's free of course

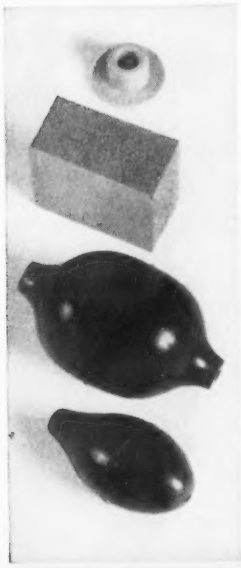
Planning service available without cost or obligation.

ROWE METHODS, INC.
2534-E DETROIT AVE. • CLEVELAND 13, OHIO

▲ For more details circle NED-844 E8 on enclosed inquiry slip ▲

RUBBER

developed and shaped to fit your specifications



MOLDED RUBBER
When you need small molded rubber parts—see Faultless. Complete facilities for mass production of bulb goods, stopples, other quality molded parts.

SPONGE RUBBER
Your best source for sponge rubber. Available in a wide choice of thicknesses and densities.

COLOR SPECIALISTS
Color is increasingly important in industrial manufacturing. As color specialists we can match almost any shade desired.

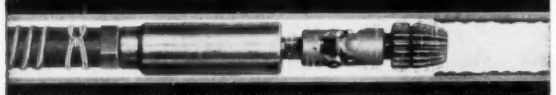
LABORATORY FACILITIES
Let us compound your rubber parts to meet your requirements. Complete laboratory facilities, expert chemists.

For Full Details Write Dept. I. The Faultless Rubber Company, Ashland, Ohio

FAULTLESS

▲ For more details circle **NED-850 E8** on enclosed inquiry slip ▲

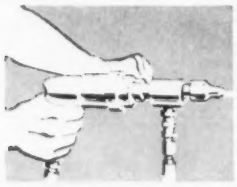
ELLIOTT
SMALL TUBE CLEANERS



types to do all jobs quickly and effectively

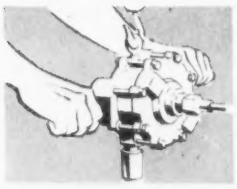
ELLIOTT 600 SERIES for small tubes—straight or curved

These air- or steam-driven motors are excellent for routing light scale in tubes with inside diameters from 5/8" to 1 3/4". Various types of cutter heads and brushes are available for specific tube cleaning requirements.



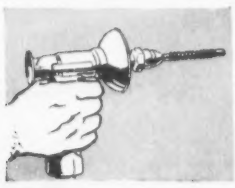
ELLIOTT 5100 SERIES lightweight cleaner for removing medium scale

Air-driven motor with trigger action for motor control, finger-action valve for water flow, built-in speed governor and oil reservoir. Two sizes.



ELLIOTT SUSPENSION SERIES for heavily scaled straight tubes

Air, steam, or electric motor drives shaft fitted with drill or brush head. Motor is suspended outside, shaft and head enter tube.



ELLIOTT JIFFY GUN for extra-fast cleaning of light accumulations

Simply insert nozzle into tube and push. Released air or water pressure shoots nylon brushes or rubber plugs through condenser or heat exchanger tubes. For tubes 1/2" to 1".

For details on Elliott tube cleaning and maintenance equipment, contact Elliott District Office or write Elliott Company, Lagonda Division, Springfield, Ohio.

Y7-1A

ELLIOTT Company
Headquarters for Tube Cleaners and Expanders

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS • CONDENSERS • CENTRIFUGAL COMPRESSORS • TURBOCHARGERS • TUBE CLEANERS • STRAINERS

▲ For more details circle **NED-851 E8** on enclosed inquiry slip ▲

New Literature & Catalogs

Power Supplies

NJE Corp.—Diversified line of electronic power supplies is detailed in 16-page illustrated bulletin. Over 900 models in 10 basic types are covered. Prices, formulas, tables, diagrams, specifications, and application data are included in each category.

▲ For more details circle **NED-852 E8** on enclosed inquiry slip ▲

Ground Flat Stock

DoALL Co.—Over 1500 standard sizes of individually packed, oil hardening and air hardening ground steel flat stock are listed on a 22 x 28-in. wall chart. Analyses, tolerances, and decimal equivalents are given.

▲ For more details circle **NED-853 E8** on enclosed inquiry slip ▲

Disc Grinders & Abrasive Discs

Gardner Machine Co.—Basic types of disc grinders, work carrying fixtures, variety of shapes and workpieces ground, automation in disc grinding, and range of sizes and types of faces of abrasive discs are illustrated and described in 24-page condensed General Catalog CG-58. Basic methods of double disc grinding are shown. Machine specifications are given.

▲ For more details circle **NED-854 E8** on enclosed inquiry slip ▲

Air Diffusion Grilles & Registers

Waterloo Register Co.—Selection tables for each of 26 standard sizes of air diffusion grilles and registers, and including new grilles with curved louvers, are found in 54-page illustrated Catalog 1-58. Also included are 40 photographs, 35 drawings, and prices.

▲ For more details circle **NED-855 E8** on enclosed inquiry slip ▲

Contour Projectors

Eastman Kodak Co., Apparatus & Optical Div.—Features of various Kodak contour projectors and details of typical applications for optical gaging in the toolroom, on the production line, in receiving, and in final inspection are presented in 16-page illustrated Booklet F2-126. A specifications chart is included, and projector accessories are described.

▲ For more details circle **NED-856 E8** on enclosed inquiry slip ▲

Electrical Distribution Equipment

Murray Mfg. Corp.—72-page illustrated, digest-type Catalog 58 offers product and ordering information on safety switches, fusible service, circuit breakers, load centers, and meter mounting equipment. Shown for the first time is the MP plug-in circuit breaker. Also covered are ND industrial safety switches, UL-approved meter sockets, and manual meter bypass.

▲ For more details circle **NED-857 E8** on enclosed inquiry slip ▲

Ovens, Furnaces & Baths

Blue M Electric Co.—Illustrated and described in 4-page Bulletin 5720 are lab-size Stabil-therm mechanical recirculating ovens, 800° F Ultra-Temp mechanical convection ovens, 2800° F Rad-O-Glow Globar furnaces, Lab-Heat muffle furnaces, batch ovens, and Magni-Whirl refrigerated water baths and jar baths. Prices are given.

▲ For more details circle **NED-858 E8** on enclosed inquiry slip ▲

Weight Indicators & Recorders

Martin-Decker Corp.—Twelve models with 2000 to 50,000-lb capacities and accuracies of 1 per cent are offered in line of lift truck weight indicators, subject of illustrated 4-page Bulletin M-8. Entire line of industrial weighing, load measurement, and recording instruments, including crane scale, lift truck weight indicators, and load cell systems, is covered in 8-page Bulletin M-15. Sensater hydraulic crane scales, offered in six capacities from 1000 to 20,000 lb, are described in 4-page Bulletin M-25.

▲ For more details circle **NED-859 E8** on enclosed inquiry slip ▲

Steel Tubular Products

Babcock & Wilcox Co., Tubular Products Div.—Information on the application of steel tubing, pipe, and welding fittings for the process industries is contained in 16-page Bulletin TB-417. Application data, material selection data, analysis, properties, and a series of case histories are included.

▲ For more details circle **NED-860 E8** on enclosed inquiry slip ▲

Dry Box Gloves

Charleston Rubber Co.—Neo-Sol neoprene dry box gloves are designed for use in nuclear dry boxes, bacteriological isolators, and safety enclosures. They are tested electrically to assure safety in use. Full details are given on these gloves in 4-page bulletin.

▲ For more details circle **NED-861 E8** on enclosed inquiry slip ▲

"FOLEY QUICK-LOAD" VISE

for quick accurate filing of circular saws 4" to 18"

A special feature is the quick-action slip cone which enables you to load, remove or reverse the saw in a jiffy. Saw is firmly held yet can be rotated by file pressure. Blade is held vertically for straight across filing, or at any desired tilt angle, with markings for 15°, 30° and 45°. Takes saws 4" to 18" diameter with arbor holes 1/2" to 1 1/4".

Foley Model 346 Circular Saw Vise enables you to turn out a fast cutting saw in jig time. Order through your supply house or we ship direct, check or open account, postpaid. **$35.00**

Place saw on threaded stud; then press plunger on cone, slide right up to saw. Release plunger to engage stud threads, then adjust tension.

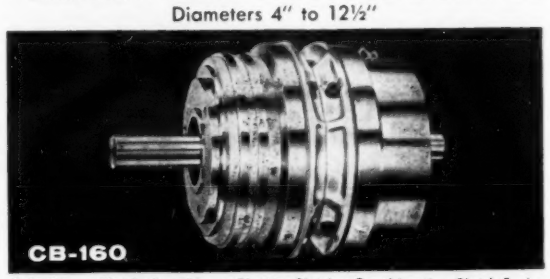
FOLEY MFG. CO. 3420 N.E. 5th St., Minneapolis 18, Minn.

▲ For more details circle **NED-862 E8** on enclosed inquiry slip ▲

now presenting . . .

Simplatrol

LARGER SIZES CLUTCHES & BRAKES
Diameters 4" to 12 1/2"



5 Styles • Clutch Coupling • Electric Clutch • Combination Clutch-Brake Electric Brake • Duplex Clutch

***Three* Ways Best for Automated Control**

1 **Simple Design**—exclusive diaphragm is only moving part, obsoletes conventional clutch or brake made up of numerous troublesome parts.

2 **Easily Mounted**—precision machined ready for mounting, saves hours of installation labor.

3 **Dependable**—extra long life as well as quick, quiet response due to absence of moving parts which can wear and need repair.

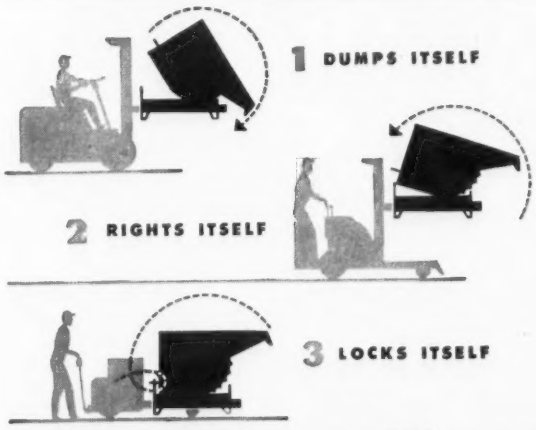
Simplatrol Electric Clutches and Brakes simplify and upgrade machines you make or use. Ask for recommendations on Simplatrol units.

Send for new "larger sizes" folder

Simplatrol *products corp.*
24-6 SALISBURY ST., WORCESTER, MASS.
Representation in Key Industrial Areas

606-7

▲ For more details circle **NED-863 E8** on enclosed inquiry slip ▲



cuts hand unloading costs 50% or more

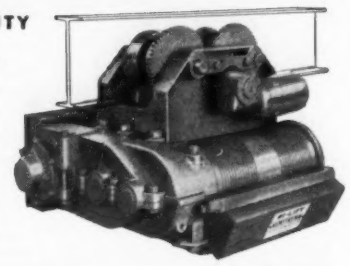
Figure it out yourself. Compare the cost of this one-man, semi-automatic operation with the time and labor involved in hand-unloading. The answer is obvious. Hundreds of leading industries have proved it . . . and are using thousands of Roura Hoppers for handling wet or dry, hot or cold bulky materials. Roura builds 'em rugged. They're made of extra heavy gauge metal with sturdy welded joints to stand up under the terrific knocks and bangs of rough handling. Fit any standard fork or platform lift truck. Also available mounted on live skids—casters with malleable or rubber tired wheels. Sizes from 1/2 to 2 cubic yards. Literature and other information available on request. ROURA IRON WORKS, INC., 1415 Woodland Ave., Detroit 11, Mich.

ROURA *Self-Dumping* **HOPPER**

▲ For more details circle **NED-864 E8** on enclosed inquiry slip ▲

NORTHERN

HEAVY-DUTY
HI-LIFT HOISTS



WITH TROLLEY DRIVE

Northern Hi-Lift Hoists, in all models from two through 15 tons capacity, with all their heavy duty, rugged features, including the same low headroom, for either A.C. or D.C. current and built with standard or fluid coupling drives, are now available with a new inexpensive trolley drive designed for moderate speeds, and for single or variable speed control. A worm drive provides smooth, quiet and trouble-free operation. Compact design and arrangement allow maximum approaches with minimum space requirement.

NORTHERN CRANES-HOISTS-TRAVELATORS

NORTHERN ENGINEERING WORKS
210 CHENE ST., DETROIT 7, MICH.

EH-3555

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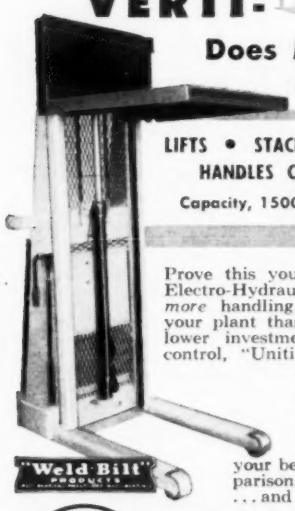
NEW... "Lift of 1001 Uses"

Weld-Bilt HY-BOY VERTI-LIFT

Does More Work FASTER...CHEAPER



LIFTS • STACKS • LOADS • UNLOADS
HANDLES Cartons, Pallets, Drums
Capacity, 1500 lbs. • Lifts, 64" to 112"

Prove this yourself . . . New HY-BOY Electro-Hydraulic Verti-lifts "just fit" *more* handling, lifting, stacking jobs in your plant than any other unit! And at lower investment! Modern push-button control, "Unitized" power unit, built-in charger, indicator light and ammeter, self-aligning floor locks, and other features — plus a wide choice of models and accessories—make HY-BOY your best investment by any comparison. Buy one . . . buy several . . . and prove it!

Get your copy of new HY-BOY Portable Verti-lift Catalog featuring the "Lift of 1001 Uses."

Materials Handling Engineers since 1932

WEST BEND EQUIPMENT CORP.
311 River Road, West Bend, Wis.

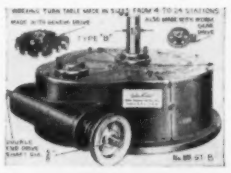
▲ For more details circle NED-866 E8 on enclosed inquiry slip ▲

EISLER

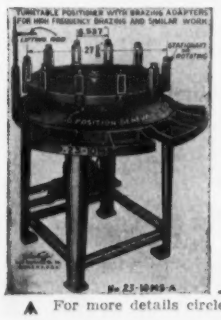
FOR 39 YEARS

We supply any part or complete equipment . . . Special turntables made to order

INDEXING TURNTABLES
MORE THAN 100 DIFFERENT TYPES
- FOR WELDING • BRAZING • SOLDERING • SPRAYING
- GLASS INSULATOR MELTING AND GLASS GLAZING with rotating stations and indexing with barrel cam or Geneva gear action.
- For work transferring, tilting positions. . Motorized or hand operated.



Eisler Indexing Turntables are completely electrically controlled



AND CAMS MADE TO YOUR SPECS!

"Ask for catalog 88-57"

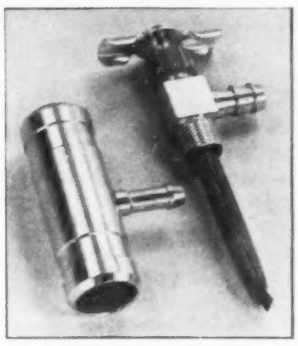
EISLER ENGINEERING CO., INC.
740 SO. 13th ST., NEWARK 3, N. J.
Charles Eisler, Jr., President

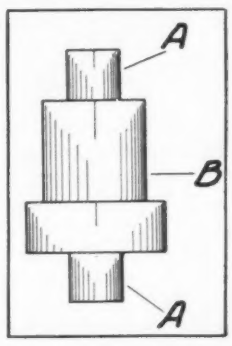
▲ For more details circle NED-867 E8 on enclosed inquiry slip ▲

New Literature & Catalogs

BRAZING & SOLDERING SERVICE
induction heating techniques used

Complete assemblies, tailored to customer requirements and consisting of two or more screw machine parts, can be produced through the production braz-





ing, soldering, and induction annealing and hardening service now offered by this company. Typical of work is filter screen for fuel shut-off shown at left. Example of induction heat treating, shown at right, is selective surface hardening of a stud at B, and annealing of areas A-A for riveting purposes. Services offered by **A. G. Kaddis Screw Products Co.**, 312 Hudson Ave., Rochester 5, N. Y.

▲ For more details circle NED-868 E8 on enclosed inquiry slip ▲

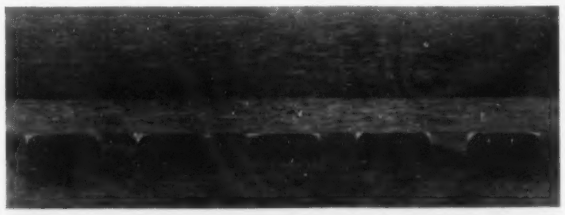
MASONRY COATING
waterproofing material in six colors

Water leakage and seepage through basement and other below-grade masonry walls is stopped by application of Water-Shield, a coating comprised of concrete powder mix and rubber - silicone liquid. Applied by brush or spray after mixing, it will resist over 50 ft of water head pressure. Applicable over previously-painted surfaces, the coating "breathes" to overcome problems of blistering, peeling, powdering, cracking, and mildewing. Application can be to brick, concrete, stone, stucco, cement or cinder block, and asbestos-cement or asphalt shingles or siding, indoors or outdoors. Material is offered in six colors in units to cover 100 to 200 and 200 to 400 sq ft, for $4.95 and $9 respectively. Made by **Camp Co.**, Dept. 90, 6958 S. State St., Chicago 21, Ill.

▲ For more details circle NED-869 E8 on enclosed inquiry slip ▲

CHANNELED-CLAD PLATE
has built-in coils; is made of wide range of metals and alloys

Coil-like passageways for a cooling or heating medium are formed in the center of a finished clad plate, and at a selected distance from either surface, by the Hor-



tonclad process. The heavy base plate, usually steel, is channeled before the alloy or nonferrous cladding layer is applied. The material can be welded like any other clad by omitting the channeling of the base material along the weld lines.

Channel cross-sections can be various sizes. Depths range from 1/4 to 1 in. and widths from 1/2 to 1 1/2 in., depending on cladding thickness. Many cladding and base plate combinations can be made, including austenitic and straight chromium stainless steels; nickel; Monel; Inconel; Hastelloys B, C, and F; silver; copper; cupro-nickel alloys; brass; and Carpenter 20 Cb.

The most popular base materials are the firebox quality, low carbon steels. Plate can be fabricated without affecting the bond, either layer, or the channels. Made by **Chicago Bridge & Iron Co.**, Dept. NED, 332 S. Michigan Ave., Chicago 4, Ill.

▲ For more details circle NED-870 E8 on enclosed inquiry slip ▲

THERE'S A TOTELINE

BOX OR TRAY OF MOLDED FIBERGLASS TO CARRY YOUR SMALL PARTS

- Light but strong
- Constant tare
- Clean easily
- No maintenance
- Don't absorb heat
- No sharp edges, corners
- Most boxes nest, stack
- Chemically resistant
- Wire reinforced edges
- Available in colors

WRITE FOR BULLETINS AND NAME OF NEAREST TOTELINE REPRESENTATIVE IN U.S. AND CANADA

MOLDED FIBER GLASS TRAY CO., LINESVILLE, PA.
World's largest producer of resin-reinforced fiberglass trays and tote boxes

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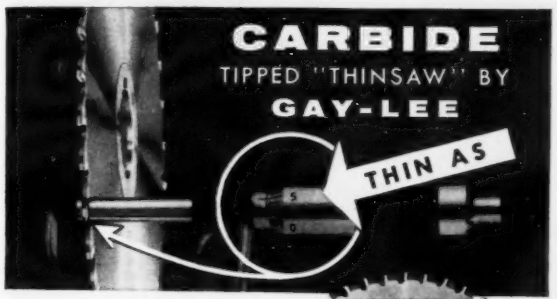
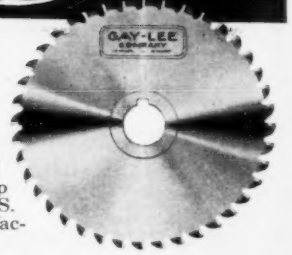




Ideal for precision, high-production sawing, slitting, slotting! Exclusive Gay-Lee design features long-wearing carbide tips brazed into a circular seat which provides more brazing area, greater mechanical strength and maximum tip security. (Patented, U. S. Pat. No. 2675603, manufactured under license.)

- Thickness low as .030"
- Thickness tolerance can be held to .0001"
- Wafer-thin for the most delicate work
- Maintain positive alignment and rigidity
- Cut to full depth without runout
- O. D. from 1½" to 10"
- Available in any carbide grade
- Made to any tooth form

CARBIDE SAW SPECIALISTS

GAY-LEE COMPANY
CLAWSON • MICHIGAN

Write for free literature, send us details of your problem, or bring your problem to Gay-Lee Booth No. 1919, A.S.T.E. Exposition, Philadelphia, May 1-8, 1958.

▲ For more details circle NED-872 E8 on enclosed inquiry slip ▲

PUMPS most anything* THAT POURS!

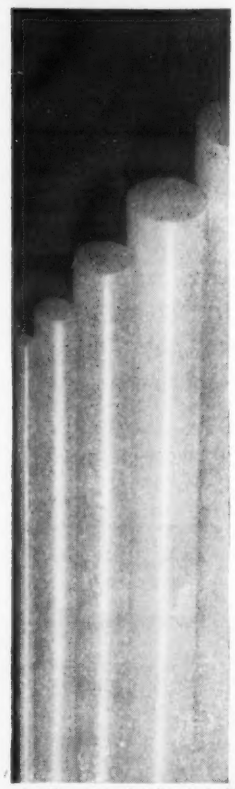
*A few exceptions. Write for approved list.

Take the risk and waste out of liquid transfer! This rugged Tokheim Hand Pump, with alternate diaphragms, handles most anything from diesel oil to acetates—safely, quickly, without spillage. Eliminates fire hazards and accidents, aids good housekeeping. Accelerates production, too. Pumps 20 gallons per 100 strokes. Get list above from your Tokheim dealer, or write direct today.

General Products Division
TOKHEIM CORPORATION
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1656 Wabash Avenue Fort Wayne 1, Ind.

Subsidiaries: Tokheim N.V., Leiden, Holland—GenPro, Inc., Shelbyville, Ind.
Factory Branch: 475 Ninth Street, San Francisco 3, California
In Canada: Tokheim-Reeder of Canada, Ltd., 205 Yonge St., Toronto, Ont.

▲ For more details circle NED-873 E8 on enclosed inquiry slip ▲



BEST NYLON ROD COSTS LEAST

Chemiseal® (du Pont ZYTEL)

—not only offers the best mechanical properties and resistance to heat, abrasion, chemicals, solvents, oils and greases—but is the lowest priced of all the standard nylon compositions.

BUBBLE-FREE. Chemiseal nylon rod for screw machine products is guaranteed bubble-free by an improved technique employed exclusively in the world's most modern plastics extrusion plant. Ends part rejects due to bubbles in stock.

NATIONWIDE AVAILABILITY through 30 sales offices and warehouses of The Garlock Packing Company assures prompt service anywhere. See your phone book for nearest office or write—

United States Gasket Company
Camden 1, New Jersey

United States Gasket
Plastics Division of GARLOCK

For more details circle NED-874 E8 on enclosed inquiry slip

HONEYWELL'S ELECTRONIC AIR CLEANER

ends processing problems caused by air-borne dust, abrasives, soot, smoke and grime

These costly microscopic spoilers never get a chance to ruin the work when Honeywell's Electronic Air Cleaner is on the job. It electronically traps particles so small they are visible only through an electron microscope—outperforms ordinary mechanical air filters six to one! Saves cleaning and painting costs, too. Modular construction; easy to install. Fill out coupon for complete details.

SOON PAYS FOR ITSELF IN...
- film and data processing
- lens grinding
- furniture finishing
- electronic tube manufacturing
- constant temperature and humidity rooms
- switch and relay rooms
- broadcast transmitters
- many other applications

MINNEAPOLIS-HONEYWELL,
Dept. NW-5-72, Minneapolis 8, Minnesota
Please send free copy of Electronic Air Cleaner booklet, "A Close Look At Air-Borne Dirt."
We have the following problems:_____

Name_____
Company_____
Address_____
City_____ Zone____ State_____

For more details circle NED-875 E8 on enclosed inquiry slip

New Literature & Catalogs

Quick-Acting Drill Press Vises

Wilton Tool Mfg. Co.—Operating advantages of the new Wilton drill press vises and the improved MilOmatic air-hydraulic vise are detailed in condensed Catalog 691. Extremely accurate work holding is possible with these vises which are designed for all types of metalworking operations.

For more details circle NED-876 E8 on enclosed inquiry slip

Cable Support Systems

Virtually a handbook on open-cable supports for industrial and process plant use, loose-leaf Catalog 1257 contains comprehensive sections on galvanized steel and aluminum cable trough, cable ladders and channel, and Rakit system supports. Of aid to all concerned with the design, specification, or installation of electric cable distribution systems, this manual is available only by writing on your company letterhead to Rome Cable Corp., T. J. Cope Div., Collegeville, Pa.

For more details circle NED-877 E8 on enclosed inquiry slip

Wood & Aluminum Ladders & Accessories

Patent Scaffolding Co.—24 pages of information on Gold Medal wood and aluminum step, single, and extension ladders are contained in Catalog L-71-RR. Also described are such accessories as trestles, ladder jacks, hooks, irons, feet, and platforms. Aluminum scaffolds and work platforms are briefly detailed.

For more details circle NED-878 E8 on enclosed inquiry slip

Explosionproof Lift Truck

Revolvator Co.—Details of the Series 5400 Go-Getter power lift truck for use in hazardous atmospheres are given in 8-page Brochure 54.00. Offered in capacities to 6000 lb, these power pallet, platform, and fork lift trucks are of explosionproof design.

For more details circle NED-879 E8 on enclosed inquiry slip

Electric Welding Accessories

Tweco Products, Inc.—Ground clamps, Twecotong electrode holders, cable connectors, cable splicers, and other electric welding cable accessories are subject of 12-page illustrated Catalog 11. Specifications and prices are given.

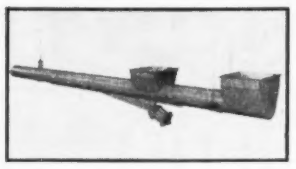
For more details circle NED-880 E8 on enclosed inquiry slip

Engineering Formulas & Tables

Basic formulas, design data, and tables for those engaged in mechanical, electrical, and civil engineering are contained in 396-page pocket-size loose-leaf Reference Manual No. 793. Sections include mathematics, measures, materials, gages, mechanics, electricity, hydraulics, structural data, reinforced concrete, pipe and fittings, steam tables, and mathematical tables. The imitation leather, three-ring binder will accept additional data sheets and bulletins. Celluloid-tabbed indexes facilitate use. Price is $4.75. Published by Lefax Publishers, Ninth & Sansom Streets, Philadelphia 7, Pa.

For more details circle NED-881 E8 on enclosed inquiry slip

NEW Conveyor for Food Packaging



Cleveland Vibrator Company's new vibrating conveyor gives two way protection to materials. First, its tubular design prevents contamination and spillage. Second, its gentle vibrating motion moves delicate products rapidly and without breakage.

The unit pictured here is now conveying loose macaroni in a western food plant at the rate of 5 tons per hour. The brittle product is moved without breakage and is fully protected from accidental pollution.

Cleveland Vibrating Conveyors are operated by low pressure compressed air. The drive mechanism has only one moving part, which is automatically lubricated, reducing maintenance to virtually zero. Because of its simple design initial cost is below that of conventional conveyors.

Cleveland conveyors can be mounted either by pedestal support or overhead suspension, making installation inexpensive and rapid.

Write today for complete details on these low cost conveyors.

THE CLEVELAND VIBRATOR CO.
Dept. K5, 2744 Clinton Ave., Cleveland 13, Ohio

For more details circle NED-883 E8 on enclosed inquiry slip

Onan PRODUCTS AIR-COOLED ENGINE NEWS Onan PRODUCTS

Rear view, showing crankshaft extension, 1¼" diam., 2 13/16" long.
Front view—Model shown has pull-rope starter. Recoil starter or electric starting available.

Only the Onan CCK engine combines these 4 advantages

LIGHTWEIGHT—Weighs only 148 pounds. Rated 12.9 H.P. at 2700 RPM with accessories.

SMOOTH OPERATION—Alternate firing, two-cylinder, horizontally-opposed design is inherently vibration-free.

LONG LIFE—Extra large bearing surfaces throughout; Stellite faced rotating exhaust valves and solid Stellite seat inserts.

COMPACT—Only 14¾ inches long to end of crankshaft extension. 19½ inches wide, 21 3/16 inches high overall.

Step up the performance of your equipment with CCK power.

Onan also builds military gasoline engines, air-cooled Diesel engines, electric plants and generators. Write for information.

D. W. ONAN & SONS INC.
3364A University Avenue S. E., Minneapolis 14, Minnesota

For more details circle NED-884 E8 on enclosed inquiry slip

Low Volume Screening For Pennies a Ton!

HUNDREDS OF INDUSTRIES ACCLAIM

MIGHTY-MITE

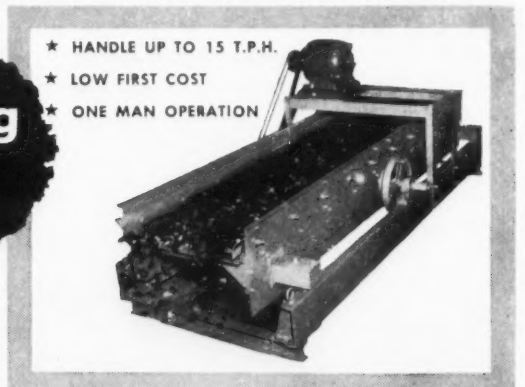
VIBRATING SCREENS

- If you have material to be screened, sized, or separated in low volume (up to 15 T.P.H.) do it the fast, accurate, economical Mighty-Mite way. Easy to set up, easy to operate and easy to move Mighty-Mites are saving money for hundreds of industrial users. Such uses as screening fine powders, removing tobacco dust, separating plastic components, and reclaiming profits from sweepings give you some idea of the possibilities.

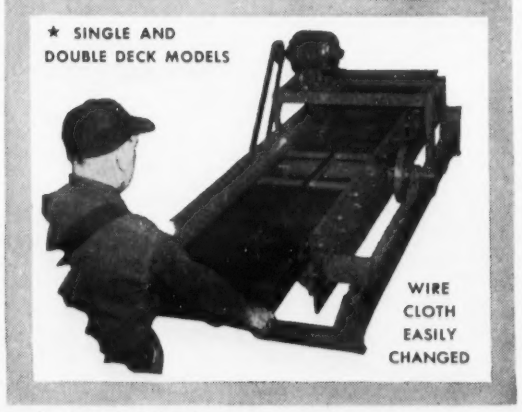
Get the Time and Labor Saving Facts Today!
Send for literature and price sheet

SCREEN EQUIPMENT CO., INC., NEW WALDEN AVE. BUFFALO 25, N. Y.

★ HANDLE UP TO 15 T.P.H.
★ LOW FIRST COST
★ ONE MAN OPERATION



★ SINGLE AND DOUBLE DECK MODELS



WIRE CLOTH EASILY CHANGED

For more details circle NED-882 E8 on enclosed inquiry slip

NEW MINIATURE AGASTAT® time delay relay

for missile, aircraft and electronic applications

INSTANTANEOUS RECYCLING . . . reset time—less than .020 seconds
UNAFFECTED BY VOLTAGE VARIATIONS . . . time delay remains constant from 18 to 30 volts DC
ADJUSTABLE . . . time delays from .030 to 120 seconds
CHOICE OF OPERATION . . . for either energizing or de-energizing
SMALL . . . height—4⅝" . . . width—1 13/16" . . . depth—1½"
LIGHT . . . maximum weight—15 ounces
MEETS ENVIRONMENTAL REQUIREMENTS OF MIL-E-5272A

This new AGASTAT time delay relay is an externally adjustable, double-pole, double-throw unit. It incorporates the basic AGASTAT timing principle, proved by a half-century of reliable operation on automatic aids to navigation, in a space-saving miniature unit built to withstand the rugged environmental conditions of missile and aircraft applications.

For specific information on the new AGASTAT relay for your application, write to Dept A30-55.

AGA DIVISION ELASTIC STOP NUT CORPORATION OF AMERICA
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing

▲ For more details circle NED-885 E8 on enclosed inquiry slip ▲

How to make "off-the-shelf" units do special filtering jobs

Save time, money and headaches by using Purolator standard units to solve your filter problems — no matter how specialized. Wide range of requirements covered!

ACIDS	FATS	PAINTS
AIR	FOODS	PASTES
ANTIBIOTICS	FUEL	PETROCHEMICALS
ANTIFREEZE	GASES	PIGMENTS
BEVERAGES	GASOLINE	REFRIGERANTS
CATALYSTS	GREASE	SOLVENTS
COATINGS	HYDRAULICS	SYNTHETICS
CONFECTIONS	INTERMEDIATES	SYRUPS
COOLANTS	LACQUERS	TOOTHPASTE
COSMETICS	LIQUORS	VARNISHES
CUTTING FLUID	MEDICINES	VEHICLES
DETERGENTS	OILS	VITAMINS
ESSENTIAL OILS	OINTMENTS	WATER
		WAXES

Filtration For Every Known Fluid

PUROLATOR PRODUCTS, INC.
Rahway, New Jersey and Toronto, Ontario, Canada

WRITE for Industrial Filter Catalog, or send schematic drawing and details for specific recommendation. Address Purolator Products, Inc., Rahway, N. J.

▲ For more details circle NED-886 E8 on enclosed inquiry slip ▲

SAFETY FIRST that's built to last . . .

I-R SPARK-RESISTANT

paving breaker tools of FORGED beryllium copper

WHEREVER sparks mean DANGER, you can play it safe — and still get maximum tool life — with I-R Spark-Resistant Paving Breaker tools. That's because they are FORGED — not merely cast — of special, high-strength beryllium copper alloy. A trial order will quickly demonstrate their superiority.

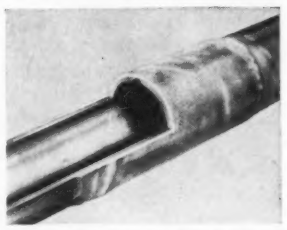
Write for Bulletin 4173
5-390

Ingersoll-Rand
11 Broadway, New York 4, N.Y.

▲ For more details circle NED-887 E8 on enclosed inquiry slip ▲

New Processes & Materials

EMERGENCY-REPAIR SEALER for metal, plastics, wood, concrete



Adhering to any clean, dry material, Homalite 345 epoxy-based sealing compound can be used with glass cloth reinforcement to make quick emergency repairs on metals, plastics, wood, concrete, and other materials. Repaired equipment can be back in service within 1 hour after permanent repairs are made. Material repairs leaking pipes, broken castings, and corroded sheet metal, and can be used as a tank and duct lining or for handling fluid chemicals and other corrosive materials. High dielectric properties make it useful for insulating, sealing, and repairing cables, coils, and other electrical equipment. It resists impact, abrasion, and corrosion; seals against pressure or vacuum; and is unaffected by temperatures up to 150° F. Kit for experimenting contains four ½-pt packages of sealer, a roll of glass cloth, rubber gloves, and a brush. Made by **Homalite Corp.**, 14 Brookside Dr., Wilmington 4, Del.

▲ For more details circle NED-888 E8 on enclosed inquiry slip ▲

ALL-PURPOSE PRIMER SPRAY provides good bond on any surface

Intended as a companion product to fast drying Krylon spray enamels, Krylon gray all-purpose primer spray assures an excellent bond on almost any surface, including bare wood, metal, plastic, and ceramic surfaces. Primer takes only a few minutes to dry. It will not settle hard in the container and therefore does not require long shaking before use. The 16-oz spray can retails for $1.79. Made by **Krylon, Inc.**, 18 W. Airy St., Norristown 1, Pa.

▲ For more details circle NED-889 E8 on enclosed inquiry slip ▲

HEAT RESISTANT PAINT aluminum finish resists 2200° F

Formulated to withstand temperatures to 2200° F, Certified Hi Temp 22 aluminum paint is offered only for spray application. It is usable on surfaces which reach temperatures in excess of 700° F, at which point a fusing action takes place and the coating is fused to the surface. This ready-mixed paint can be applied to clean, dry metal surfaces. Special brush type finish is considerably higher in price. Made by **United Laboratories, Inc.**, 16804 Euclid Ave., Cleveland 12, Ohio.

▲ For more details circle NED-890 E8 on enclosed inquiry slip ▲

ANY TYPE OF PRECISION BORING IN ANY SIZE SHOP

GREENLEE Model C-4 HYDRO-BORER*

• PATENTED FEED PRINCIPLE ASSURES ACCURACY
• EASY TO SET UP

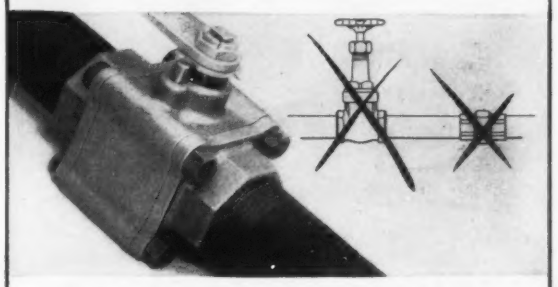
Greenlee Model C-4 Hydro-Borers can be tooled to meet wide ranges of precision boring work. Special fixtures can be mounted on face of machine. High degrees of accuracy, quick setups, quality of finish bring precision boring to any size shop. Easily portable. Write today!

MODEL C-4 HYDRO-BORER
SIZE — 11¼" x 9" x 30"
WEIGHT — 90 lbs.

GREENLEE BROS. & CO.
2245 MASON AVENUE
Rockford, Illinois

▲ For more details circle NED-891 E8 on enclosed inquiry slip ▲

WORCESTER'S
Econ-O-"Miser" Ball Valve* cuts operating costs up to 40%



SERVES AS BOTH A VALVE AND UNION IN THE LINE

If you replace only 100 one inch 150 pound gate valves a year in your plant, the Econ-o-"miser" can save you at least $659. and up to $884. a year on this size alone. Easy in-line maintenance should replacement of parts become necessary . . . without touching the pipe ends, valve center section can be removed, seating surfaces or "O" rings replaced, and this unit re-installed in a matter of minutes.

For more information on this and Worcester's outstanding line of BALL, GATE, or NEEDLE VALVES contact:

WORCESTER VALVE CO., Inc.
18 Parker Street, Worcester, Mass. *Pat Pending

▲ For more details circle NED-892 E8 on enclosed inquiry slip ▲

DON'T LET DARKNESS COST MONEY!
LIGHT UP WITH Cordomatic®

DROP LIGHT REELS

20', 30' & 40' cord lengths. Grounding Type Also Available

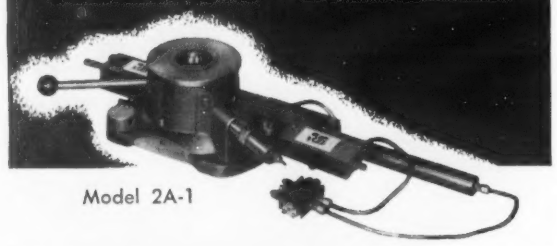
Ideal for loading platforms, warehouses, construction jobs . . . wherever portable light is needed. Low in cost, mounts easily on wall or ceiling, locks and releases at any desired length. Works like a window shade.

Send for free brochure and dealer price sheet.

CORDOMATIC, Dept. "X"
17th & Indiana Ave., Philadelphia 32, Pa.
Name
Firm
Address
City Zone State
Your Jobber

▲ For more details circle NED-893 E8 on enclosed inquiry slip ▲

NEW JS SMITH INDEXING FIXTURES



Model 2A-1

Pays for itself quickly . . . for drilling, tapping, reaming, counterboring and milling operations.

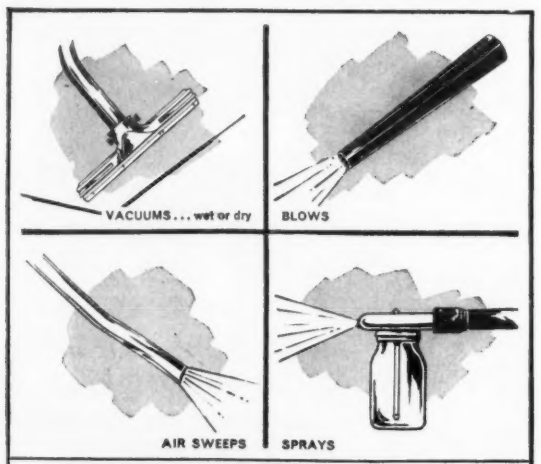
Positive, rapid indexing accuracy is accomplished by unique air sequence valve which causes air cylinders to actuate rack and index lock. Beveled plunger gives positive spring lock. Rugged construction, quick easy setups — speeds production. Only a screw driver is needed to change positions. Operates with mechanical or solenoid valves.

Write for bulletin describing complete line.

Distributors interested in handling the Smith Indexing Fixtures are invited to write.

James Smith and Son, Inc.
982 SOUTHBRIDGE ST., WORCESTER 10, MASS.

For more details circle NED-900 E8 on enclosed inquiry slip



DOES ALL THIS . . . AND PLENTY MORE*

CLEMENTS Cadillac QUIK-VAC® MODEL 14

*Many pieces of optional equipment available for handling all kinds of cleaning, maintenance and production jobs.

YOU SAVE . . . time, trouble and dollars with the versatile and *dependable* Cadillac Quik-Vac. *Two speeds* for greater utility—Simplest hookup! Hose can be attached to dirt container, to power unit inlet, or power unit outlet without additional couplings and hose—and only Clements-Cadillac has it. (Patent applied for.)

CLEMENTS Cadillac QUIK-VAC® MODEL 21

Versatile clean-up teammate! Powerful, yet portable with big capacity . . . triple filter . . . disposable dust bag . . . three circular bumpers for all-around protection. 8 piece set of cleaning tools included at no extra cost!

FLOATING BRUSH
In rug nozzle adjusts automatically to any type of floor covering.

WRITE FOR NEW BULLETIN AND NAME OF DEALER

Industrial Division
CLEMENTS MFG. CO.
6627 S. Narragansett Ave., Chicago 38, Ill.

SINCE 1910 — *Specialists in vacuum cleaning equipment for home, business and industry.*

For more details circle NED-901 E8 on enclosed inquiry slip

New Literature & Catalogs

Pulverizing & Pneumatic Mills

Bradley Pulverizer Co.—Latest information on line of semifine and fine pulverizing screen and pneumatic roller mills is found in 30-page Catalog 63. Detail drawings, specifications, capacity, construction, and maintenance facts are given for units capable of grinding many materials.

For more details circle NED-902 E8 on enclosed inquiry slip

Standard & Special Washers

Joliet Wrought Washer Co.—Dimensions, prices, and finishes for the complete listing of standard and special industrial washers are given in 16-page illustrated catalog. Belleville, flat, square, round, hardened, bevel, and spring lock washers, plus expansion plugs, caster shims, and machinery bushings are covered.

For more details circle NED-903 E8 on enclosed inquiry slip

Industrial Cranes

Ederer Engineering Co.—Construction details, selection data, design features, and specifications of line of industrial cranes are found in second edition of 30-page illustrated Bulletin CR-610. Included are box girders; I-beam girders; bridge trucks, parts, and drives; trolleys and frames; hoist gears and cases; and crane controls, operating speeds, and clearances.

For more details circle NED-904 E8 on enclosed inquiry slip

Aluminum Mill Products

Kaiser Aluminum & Chemical Sales, Inc.—Listing and description of available aluminum mill products are content of 24-page booklet. Covered are sheet, plate, foil, circles, casting alloys, pig, alloy ingot, rod, bar, wire, electrical conductor, forgings, extrusions, roofing, siding, and ShadeScreen. Characteristics, fabricating and finishing techniques, and properties are given.

For more details circle NED-905 E8 on enclosed inquiry slip

Dynamotors

Carter Motor Co.—Dynamotor power supplies for electrical and electronic equipment are described in 28-page illustrated Catalog 158. Several new models, including the fan-cooled Genemotor, are covered.

For more details circle NED-906 E8 on enclosed inquiry slip

Clear Plastic Materials

Homalite Corp.—Physical and chemical properties of six special clear plastic materials are set forth in 6-page brochure. Also covered are coating materials for making emergency repairs. These plastics offer superior resistance to corrosion, abrasion, crazing, temperature, and shattering. They are readily machinable, and one is permanently antistatic.

For more details circle NED-907 E8 on enclosed inquiry slip

How to Indicate Speed

Jones Motrola Corp.—Jones tachometers for indicating rotational or linear speed in all types of machines and equipment are described in 12-page Booklet 58. Panel-mount and hand tachometers for speeds to 50,000 rpm, surface speed indicators, and speed monitors for indicating and controlling speed are covered.

For more details circle NED-908 E8 on enclosed inquiry slip

Small-Diameter Tubing

J. Bishop & Co., Platinum Works—20-page technical reprint "Metals for Precision and Performance" shows typical end uses of small-diameter stainless steel, nickel, and nickel alloy tubing. Company's facilities for producing fabricated tubing parts, as well as redrawing operations, are described.

For more details circle NED-909 E8 on enclosed inquiry slip

Off-The-Ground Maintenance

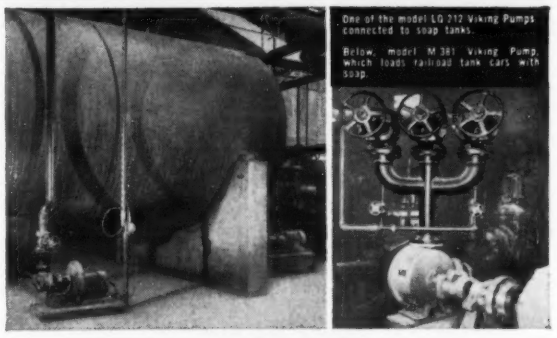
Patent Scaffolding Co.—Exactly the right scaffold and ladder equipment to use for common off-the-ground maintenance jobs is explained in illustrated manual "Controlling Costs." This Bulletin G205RR describes all types of equipment for overhead maintenance, construction, and servicing.

For more details circle NED-910 E8 on enclosed inquiry slip

Guide to Plastic Tubing

Cobon Plastics Corp.—All the technical information needed to select and apply specialized plastic tubing to industrial production and laboratory research jobs is presented in 8-page guide to plastic tubing. Data and specifications are given for polyvinyl chloride, polyethylene, and Teflon tubing.

For more details circle NED-911 E8 on enclosed inquiry slip



VIKINGS PUMP THICK SOAP ...for St. Regis Paper Mill

In their newly-enlarged Jacksonville, Florida, mill, St. Regis Paper Company installed the most modern, efficient equipment available. Included are three heavy-duty Viking Pumps to handle black liquor soap skimmings. This soap is thick and viscous, yet only two model LQ212 Vikings pump 25,000 gallons a day into two separating tanks. And one model M381 Viking loads 12,000-gallon tank cars in approximately one and a half hours. You see, Vikings are built for rugged pumping.

If you have to move thick liquids, we'd like to help. Write now for bulletin Section CG

VIKING PUMP COMPANY
Cedar Falls, Iowa, U.S.A. In Canada, it's "ROTO-KING" pumps
See Our Catalog in Sweet's Plant Engineers File

For more details circle NED-912 E8 on enclosed inquiry slip

Important News FROM MEYERCORD

CHECK AND PIN THIS AD TO YOUR LETTERHEAD AND WE'LL SUPPLY THE FACTS

PLANT MAINTENANCE MARKING KIT
for Marking Water, Heating and Air Conditioning Systems
The modern, low cost solution to plant equipment identification . . . now in use by leading manufacturers and service organizations. Provides standardized identification, absolute legibility, and permanency at remarkably low cost. Kit includes 474 signs assorted over 59 operational subjects. Easily applied in seconds. Check for literature.

LUBRI-CAL MARKING KIT
Take the Guesswork Out of Your Lubrication
An important preventive maintenance program. The *Lubri-Cal Marking Kit* consists of the proper frequency of numerals, letters and instruction nameplates for identifying lubrication points and required lubricants on plant, production and operating equipment. *Lubri-Cals* are permanent, tough, oil-resistant transfers; easily adaptable to any lubrication system.

MEYERCORD DECAL MARKING METHOD
Decal product markings for "difficult surfaces"
Heat, abrasion, weather and many of the new industrial surfaces are deadly enemies of most product markings. But not to new, improved Meyercord Decal Markings—types C, G, J and H (heat resistant). One of these new markings will almost certainly solve the problem. For exact recommendations *ask for new brochure.*

the MEYERCORD co.
Dept. U-316, 5323 West Lake St., Chicago 44, Illinois

For more details circle NED-913 E8 on enclosed inquiry slip

PAK-RAPID MACHINES AUTOMATIC PACKAGING

AMA PKG. SHOW 1122

NEW-LOW COST-FAST POUCH TYPE PACKAGE

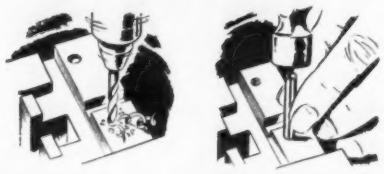
ADJUSTABLE PACKAGE SIZE WIDTH & LENGTH WITH NO CHANGE OF PARTS—LIQUIDS—POWDERS—SOLIDS—ELECTRIC EYE REGISTRATION—VARIOUS FEEDING ATTACHMENTS AVAILABLE—FOR INFORMATION WRITE TO

PAK-RAPID INC. 1945

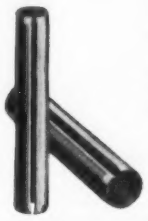
1816 ELIZABETH ST., WEST CONSHOHOCKEN, PA.
MIDWEST OFFICE: 131 E. 211TH ST., CLEVELAND 23, OHIO
REPRESENTATIVES IN ALL PRINCIPAL CITIES & CANADA

For more details circle NED-914 E8 on enclosed inquiry slip

Cut fastening costs



Just drill and drive SEL-LOK spring pins



Drill an ordinary-tolerance hole. Drive a SEL-LOK. Spring action makes these slotted tubular pins self-locking, keeps them tightly in place, despite impact and vibration. They eliminate costly tapping, reaming, peening and milling, as well as the rejects associated with close tolerances. They simplify design and reduce assembly time. Use SEL-LOK spring pins as axles, keys, hinge pins, cotter pins, pivots or stop pins—in metal assemblies or in products of nylon, Bakelite, hard rubber or fiber. Full range of sizes (1/16 x 3/16 to 1/2 x 5 in.) in carbon and corrosion-resistant steel. Also in beryllium copper (1/16 x 3/16 to 1/4 x 3 1/2 in.). Stocked by industrial distributors. Write for new Bulletin 2331. STANDARD PRESSED STEEL CO., Jenkintown 24, Pa.

SPS Jenkintown • Pennsylvania

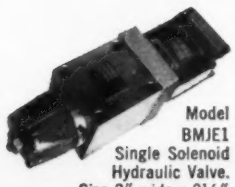
Standard Pressed Steel Co. • The Cleveland Cap Screw Co. • Columbia Steel Equipment Co., Inc. • Nutt-Steel Corporation • SPS Western • Stanaco Canada Ltd. • Unbrako Socket Screw Co., Ltd.

▲ For more details circle NED-915 E8 on enclosed inquiry slip ▲

IT'S NEW from BECKETT

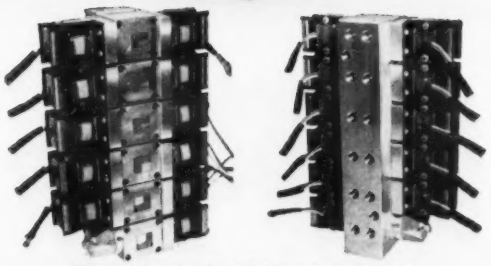
Small size high performance air and hydraulic valves for manifold mounting (Note Valve Sizes)

Model BMJE2 Double Solenoid Air Valve. Size 2" wide x 2 1/4" high x 8 1/2" long. Top and bottom views shown.



Model BMJE1 Single Solenoid Hydraulic Valve. Size 2" wide x 2 1/4" high x 7 1/4" long.

Provide extremely compact multiple valve installation with common subplate for automation controls on specialized machine tools and other production equipment.



Typical six valve installation—top and bottom views shown. Block is 12 1/2" long.

- Valves mount on 2" centers.
- Up to 6 units on one manifold.
- Two, three or four way.
- All spool types available.
- Special spools to specifications.
- Solenoid, pilot or manual control.
- Nominal 1/4" size

WRITE now for full details on this latest Beckett Hi-Cyclic Valve development. Check with Beckett on all of your directional control valve requirements.

DISTRIBUTORS IN MAJOR CITIES COAST-TO-COAST

THE BECKETT-HARCUM COMPANY

1147 WAYNE ROAD, WILMINGTON, OHIO

▲ For more details circle NED-916 E8 on enclosed inquiry slip ▲

New Processes & Materials

COILED ENAMELING STEEL
16 to 22 gage, 24 to 60 in. wide

Volume production of USS Vitrenamel normalized enameling steel in coil form enables manufacturers to maintain a flexible inventory by shearing and slitting it in their plants to any length or multiple of widths required. Coils are offered in 16 to 22-gage, 24 to 60 in. wide, and up to 50,000 - lb coil weight. The special-analysis steel is highly ductile and easy to fabricate. The low metalloid steel is well-suited for enameling and firing by the user. Applications include appliances, building exteriors and interiors, sanitary ware, signs, reflectors, and blackboards. Made by **United States Steel Corp.**, Room 2609, 525 William Penn Place, Pittsburgh 30, Pa.

▲ For more details circle NED-917 E8 on enclosed inquiry slip ▲

ANTISEPTIC HAND SOAP
cleans and prevents infections

Reported to reduce resident skin bacteria by as much as 97 per cent, Handisan with Actamer destroys deeply imbedded gram - positive organisms, not readily removable with soap and water, which are responsible for superficial skin infections, and which may be contributory to secondary infections resulting from cuts and scrapes. It is nonirritating, is made up of many different size granules, and is readily dispensed from washroom soap dispensers. Made by **Turco Products, Inc.**, Dept. E-7, 6135 S. Central Ave., Los Angeles 1, Calif.

▲ For more details circle NED-918 E8 on enclosed inquiry slip ▲

CELLULOSE BASE FINISHES
are fusion bonded to preheated metal parts in a uniform thickness

Castings, steel wire fabrications, and stampings in a wide range of sizes are coated with cellulose base finishes of uniform thickness by the Whirlclad process.

Parts are unmarred by sags, drips, or irregularity of material flow. Coating thickness from 8 to 15 mils can be obtained in a single step.

Parts to be finished are preheated and dipped into a "fluidized" bed of Corvel dry coating powders which bond by fusion onto the surface of the part. The finish penetrates contours on complex shapes, yet does not bridge over on wire product joints. Powders of various colors can be applied to a surface of controlled sheen from semidull to high gloss.

Finish is resistant to salt spray, chemicals, and sunlight; has good wearing properties; and is a good insulator. Also available are Corvel nylon, polyethylene, and K-51 chlorinated polyether fusion bond finishes. Process is available for license from **National Polymer Products, Inc.**, 125 N. Fourth St., Reading, Pa.

▲ For more details circle NED-919 E8 on enclosed inquiry slip ▲

STOP HYDROSTATIC PRESSURE LEAKS THROUGH CRACKS or HOLES IN UNDERGROUND WALLS with

SEEP-SEAL

STOPS THE LEAK IN 2 MINUTES

Water seepage, even hydrostatic pressure leaks, commonly found in underground concrete structures, are no longer a difficult problem to overcome. A simple, quick and most effective remedy is found in Seep-Seal. This amazing new formula, mixed with Portland cement, and inserted in any crack or actual hole in concrete, will set within 2 MINUTES to shut off ALL leakage. Ideal for manholes, elevator pits, reservoirs, subways, mine-shafts and similar structures. Also widely used in plaster-consistency for damp-proofing floors and walls.

Write for complete details and prices today. Immediate shipments

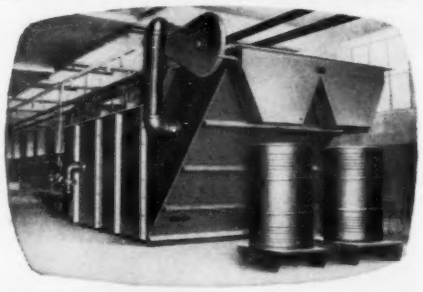
ROCK-TRED Corporation

Manufacturers of a Complete Line of Building Maintenance Materials

7440-7450 North St. Louis Avenue • Skokie, Illinois

▲ For more details circle NED-920 E8 on enclosed inquiry slip ▲

how HOFFMAN MAGNAFLO SEPARATORS pay their way at



UNION TWIST DRILL

The installation of a Hoffman Magnaflo Separator for the removal of metal particles from oils and coolants at the Union Twist Drill Co. plant in Athol, Massachusetts solved numerous clarification problems and resulted in these money saving improvements:

- Down time was reduced to a minimum.
- With wheel grinding drastically reduced, wheel life was greatly extended.
- Previously discarded dirty cutting oil was reclaimed and used over and over again.
- The Magnaflo Separator required virtually no maintenance.
- Faster volume production was achieved at less cost.
- Savings in time and labor paid for the equipment in a relatively short time.

write for Magnaflo Separator catalog A-860

INDUSTRIAL FILTRATION DIVISION

U.S.HOFFMAN MACHINERY CORP.

103 FOURTH AVENUE, NEW YORK 3, N. Y.

▲ For more details circle NED-921 E8 on enclosed inquiry slip ▲

LIGHT, CAPABLE . . . LOWEST PRICE OF ALL!

About half the price of other "low-cost" copiers! Yet the Bantam gives you all the extras of Verifax copying! Makes 5 copies of any document in 1 minute for as little as 2½¢ each—on white bond-type paper, card stock, printed office forms—front and back, if you wish. All important, too, Verifax copies are *accurate and complete*.

Phone your Verifax dealer for free demonstration. (Check Yellow Pages under "photocopying" or "duplicating" machines.)

Price quoted subject to change without notice.

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Business Photo Methods Division

343 State St., Rochester 4, N.Y.

Kodak TRADEMARK

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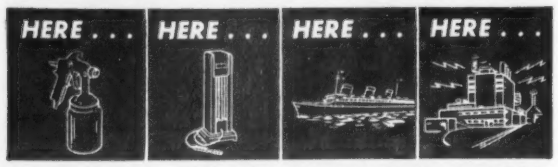
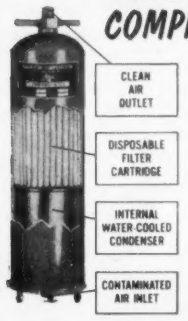


IN PLANTS THROUGHOUT THE WORLD ENGINEERS SPECIFY

HANKISON Condensifilters for INSTRUMENT-QUALITY COMPRESSED AIR

HERE IS YOUR ANSWER TO COMPRESSED AIR PROBLEMS



From steel companies to steamships . . . from paint spray equipment to power plants . . . wherever POSITIVE PROTECTION for pneumatic instruments and controls is required, Hankison Condensifilters are specified.

Condensifilters eliminate:
- Moisture, *entrained and vaporized*
- Oil, *entrained and vaporized*
- Dirt — Scale — Rust

Write today for Bulletin M-7155R.

HC-12 *Condensifilters are ASME coded.*

HANKISON CORPORATION
College & Pike • Canonsburg, Pa.

For more details circle NED-923 E8 on enclosed inquiry slip

. . . that's AERO-SEAL . . . the precision worm gear clamp with a thousand industrial shop and maintenance uses. AERO-SEAL is self-locking, tight-sealing, easy to install in seconds—and AERO-SEAL stays put. Compare the STRENGTH of the worm gear. Note the band of corrosion resistant 302-18-8 stainless steel . . . AERO-SEAL won't pinch or damage hose because it exerts uniform pressure at every point. Reusable over and over and available in a wide range of sizes. Insist on the leader . . . genuine AERO-SEAL.

For added quick-attach advantage:

Aero-Seal
REGULAR WORM GEAR HOSE CLAMPS

BREEZE CORPORATIONS INC., 700 LIBERTY AVENUE, UNION, NEW JERSEY

For more details circle NED-924 E8 on enclosed inquiry slip

SEALS CARTONS TIGHT...EVERY TIME

Electrically-heated water softens tape glue for complaint-proof seal.
You ship stronger, safer, neater packages.

You save up to 20% in time and tape, too. Just dial desired length—out comes ready-to-use tape for any size carton.

Write for free booklet T-18.

MARSH STENCIL MACHINE CO.
T-27 23 Marsh Building • Belleville, Illinois

For more details circle NED-925 E8 on enclosed inquiry slip

New Literature & Catalogs

Plastic Vials & Containers

Lermer Plastics, Inc.—Described in illustrated catalog on stock plastic containers are threaded containers with metal and molded plastic screw cap closures, shoulder containers with polyethylene snap-on closures, shell containers with plastic plug closures, sifter fitments for threaded and shoulder vials, and plastic Coupl-Vials for single and double packaging.

For more details circle NED-926 E8 on enclosed inquiry slip

Aluminized Steel

Armco Steel Corp.—Such subjects as atmospheric corrosion resistance, mechanical properties, resistance to fire damage, and high heat reflectivity which relate to Aluminized Steel Type 2 are cited in 24-page guidebook. Available sizes, gages, and forms; fabricating and finishing techniques; and property data on this aluminum-coated steel are discussed.

For more details circle NED-927 E8 on enclosed inquiry slip

Miniature Assemblies & Components

PIC Design Corp.—Entitled "New Products for 1958," 24-page Catalog Supplement No. 15 describes over 500 new components such as worm-and-wheel and speed reducer assemblies, helical gear components, magnetic clutches, instrument panel clocks, and precision engraved dials and parts.

For more details circle NED-928 E8 on enclosed inquiry slip

Die Sets & Accessories

E. W. Bliss Co., Die Supply Div.—Dieco Catalog 70-A contains five separate sections ranging from 8 to 16 pages which present details of thousands of die sets and accessory products. Sizes, prices, ordering guidance, and specifications are given for each. Described are such things as die sets, bolster plates, guide pins and bushings, die springs and assortments, hard steel drills, layout fluid, cap screws, knobs, washers, nuts, and bolts.

For more details circle NED-929 E8 on enclosed inquiry slip

Machine Tool Data

Brown & Sharpe Mfg. Co.—The entire B & S line of milling, grinding, and screw machines is thoroughly described in 36-page Catalog MT2. The various optional mechanisms and accessory equipment available for use with these versatile machine tools are covered also. Design features and performance advantages of machines are explained with phantom photographs and detailed pictures.

For more details circle NED-930 E8 on enclosed inquiry slip

Automatic Controls

Automatic Control Co.—Bulletin BG158 is titled "Autocon Buyer's Guide." It contains descriptions, application details, and circuit diagrams on a complete range of pressure, liquid level, telemetering, and convenience controls. Various types are listed for water, sewage, industrial, and original equipment control. Both components and complete systems are available.

For more details circle NED-931 E8 on enclosed inquiry slip

vigilance

Final victory over cancer will come from the research laboratory. But there are victories today. Many cancers can be cured when detected early and treated promptly. *Vigilance* is the key to this victory.

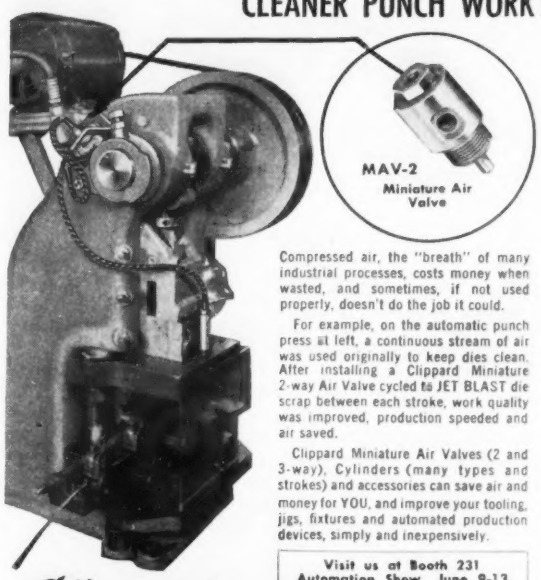
There are seven signals which might mean cancer. Vigilance in heeding them could mean victory over cancer for you.

1. Unusual bleeding or discharge. 2. A lump or thickening in the breast or elsewhere. 3. A sore that does not heal. 4. Change in bowel or bladder habits. 5. Hoarseness or cough. 6. Indigestion or difficulty in swallowing. 7. Change in a wart or mole.

If your signal lasts longer than two weeks, go to your doctor to learn if it means cancer.

AMERICAN CANCER SOCIETY

How to SAVE Your BREATH, MONEY, and do CLEANER PUNCH WORK!



Compressed air, the "breath" of many industrial processes, costs money when wasted, and sometimes, if not used properly, doesn't do the job it could.

For example, on the automatic punch press at left, a continuous stream of air was used originally to keep dies clean. After installing a Clippard Miniature 2-way Air Valve cycled to JET BLAST die scrap between each stroke, work quality was improved, production speeded and air saved.

Clippard Miniature Air Valves (2 and 3-way), Cylinders (many types and strokes) and accessories can save air and money for YOU, and improve your tooling, jigs, fixtures and automated production devices, simply and inexpensively.

Visit us at Booth 231 Automation Show June 9-13

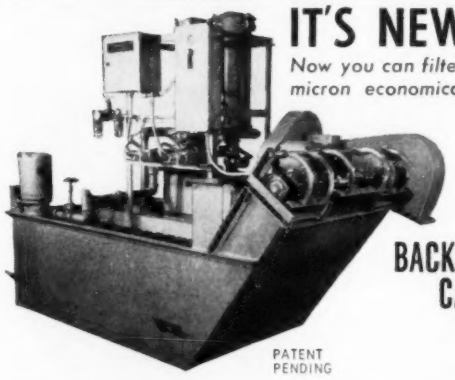
Clippard INSTRUMENT LABORATORY, INC.
7382-N Colerain Rd., Cincinnati 39, Ohio • Phone: JAckson 1-4261

Manufacturers of R. F. Coils, Electronic Equipment, Miniature Pneumatic Devices

For more details circle NED-932 E8 on enclosed inquiry slip

IT'S NEW!!

Now you can filter down to 5 micron economically!



HENRY BACKFLUSHING CARTRIDGE FILTER

PATENT PENDING

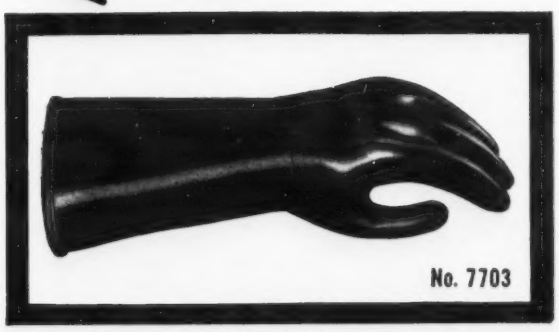
We refer to cast iron honing with kerosene coolant and other similar tough filtering jobs.
Complete systems for Automation or small hand operated systems.
Back flushes as required to maintain flow rate.
Filter media: Fibre—Fabric—Metal.
Cartridge life 500 hours or more depending on service.
For: Oil—Chemicals—Water.
Capacities 5 to 500 GPM.

HENRY MANUFACTURING COMPANY, INC.
P. O. Box 219 Bowling Green, Ohio

For more details circle NED-933 E8 on enclosed inquiry slip

Exclusive Design for extra safety

HOOD GAUNTLET



This all-purpose neoprene-coated industrial gauntlet has reinforced 6" cuff *with anti-rip binding* for complete forearm protection. Fully curved fingers for proper fit and flexibility. No bunching on palm—no binding on back. *Reinforced thumb crotch* for extra wear. Industrial weight, 14½" over-all.

Write today for free Hood Glove Guide—shows you how to choose the RIGHT glove for EACH job.

HOOD RUBBER CO.,
a division of the B. F. Goodrich Company
WATERTOWN, MASS.

RUBBER • NEOPRENE • PLASTIC COATED INDUSTRIAL GLOVES

For more details circle NED-934 E8 on enclosed inquiry slip

L-S JACKLIFT® ELECTRIC "WALKIE"

JACKLIFT's unique ROTO-CAM handle puts all the controls at the operator's fingertips. One convenient location houses traction speeds, forward and reverse, braking, lifting, lowering, key switch and horn. Other features include Dynamic Braking, Controlled Plugging and a host of other L-S Engineering "firsts". Ask for Catalog 34-1 and Circular 34-H.

The MASTER® Line—
The COMPLETE line of Materials Handling Equipment

LEWIS-SHEPARD®
175 Walnut Street • Watertown 72, Mass.

▲ For more details circle NED-935 E8 on enclosed inquiry slip ▲

NEW FROM THOR!

1000 LB. CAPACITY

Fastest lifting, fastest lowering rate of all small air hoists!

BEST CONTROL FOR PIN-POINT LOAD-SPOTTING!

Ask for Bulletin No. JE-2367

Thor Power Tool Co.
Prudential Plaza,
Chicago 1, Ill.
Branches in all principal cities

▲ For more details circle NED-936 E8 on enclosed inquiry slip ▲

New Processes & Materials

STAINLESS STEEL CLEANER removes brown welding stains

Brown stain marks left after Heli-arc welding are removed from stainless steel by Sta-Clean, a compounded cleaner. It is equally effective for removing other stains and grease. Cleaner is safe for hands and does not give off harmful vapors. The 24-oz can is priced at $2.00. Made by **Leedal Inc.**, Dept. ND, 2929 S. Halsted St., Chicago, Ill.

▲ For more details circle NED-937 E8 on enclosed inquiry slip ▲

RESIN PLASTIC stable under heat and humidity

Ability to retain its properties under high temperatures and humidity, during extended stress, or on exposure to most solvents is characteristic of Delrin acetal resin. It combines high tensile strength, toughness, high melting temperature, long fatigue life, dimensional stability, solvent resistance, and resistance to deformation. Tests show that Delrin has promise as a commercial plastic. It can be processed by conventional molding, extrusion, or fabricating techniques. Made by **E. I. duPont de Nemours & Co.**, Dept. NED, Wilmington 98, Del.

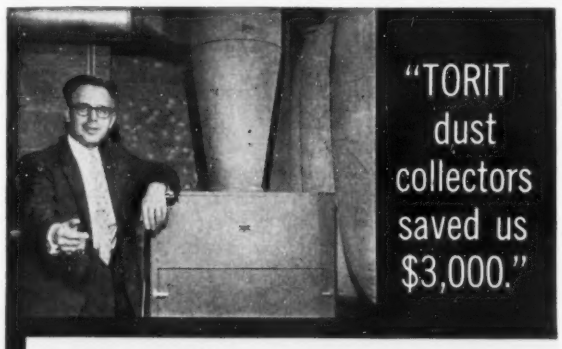
▲ For more details circle NED-938 E8 on enclosed inquiry slip ▲

PROTECTIVE DRAWING FILMS adhere to layouts and artwork

Usable for masking as well as a clear protective overlay for artwork, layouts, and drawings, Clear Tak is an adhesive-backed transparent plastic sheet. It can also be used to give a gloss finish to dummies or layouts prepared on dull-surface papers. It is easily applied by stripping off its protective backing sheet and laying it over work with smooth, even pressure. It can be removed to permit changes or additions to artwork or drawing.

Also developed is Matte Tak which has the same properties as Clear Tak, except that its matte surface accepts typing, writing, or drawing. Standard sizes of materials are 14 x 21 in. and 12 x 18 in., respectively. The adhesive is water-clear and heat resistant, so that standard methods of reproduction can be used. Made by **Chart-Pak, Inc.**, Dept. E, 55 Mulberry St., Leeds, Mass.

▲ For more details circle NED-939 E8 on enclosed inquiry slip ▲



FREE BOOKLET shows you how to trap harmful dust better at less cost with TORIT.

Your plant can have the same initial savings and cost-cutting operation now enjoyed by the Sico Manufacturing Company, national producers of tables and seating equipment. Sico President, Kermit H. Wilson states, ". . the lowest bid we had for a central dust collection system of minimum capacity was just under $4,000. Our $900 Torit installation has completely solved our dust problem and gives us greater flexibility than would be possible with a central system." There's a TORIT Collector to meet every type of dust problem, why not investigate?

FREE facts on TORIT DUST COLLECTORS that reduce maintenance costs, up production, improve employee morale. Write today to:

TORIT MANUFACTURING CO.
287 Walnut Street, St. Paul 2, Minn., Dept. 202

▲ For more details circle NED-940 E8 on enclosed inquiry slip ▲

Newest and Finest

Industrial Beacon Ray Warning Light

Where you need a warning you need the best warning

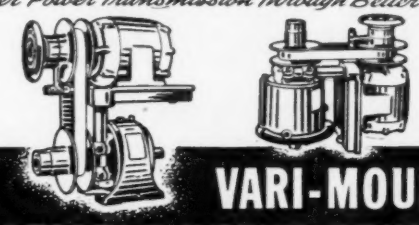
The adaptability and success of the model 275 Beacon Ray created demand for an even more powerful and more rugged warning light. The new MASTER Beacon Ray Model 271 more than doubles the intensity and range of prior designs. It can mount on a 1" pipe or on a flat surface. It has a substantial cast aluminum housing and a heat resistant glass dome which houses a mechanism that rotates a single, powerful sealed-beam spot lamp. The hinged cover with single clasp, facilitates relamping and inspection. The MASTER Model 271 Beacon Ray is built for real service and full dependability! The only revolving warning light with adjustable tilt-beam feature. Write for bulletin on new MASTER Beacon Ray Model 271 light today.

FEDERAL SIGN and SIGNAL Corporation
8711 South State Street, Chicago 19, Ill.

▲ For more details circle NED-941 E8 on enclosed inquiry slip ▲

FOOTE BROS.

Better Power Transmission Through Better Gears

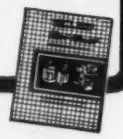


VARI-MOUNT VARIABLE SPEED DRIVES

- 1 to 15 HP
- Variable Adjustment Ranges from 2:1 to 6:1
- Output RPM from 712 to 2.5, depending on ratio and speed range selected

Vari-Mount Drives, available in horizontal or foot mounted, vertical or flange mounted, and extended shaft flange mounted types, offer infinitely variable speed selection, great flexibility of operation, easy maintenance.

Use your own motor — old or new NEMA Standard, or specify your choice when ordering. Positive handwheel control. Remote or automatic controls available. Spring loaded, self-centering variable pulley and close-coupled, in-line design insure permanent belt alignment, smooth performance. Quick belt changes, easily accessible lube fittings mean low maintenance costs.



Catalog JB has complete details and selection data. *Write for your copy.*

FOOTE BROS. GEAR AND MACHINE CORPORATION
4569 South Western Boulevard • Chicago 9, Illinois

▲ For more details circle NED-942 E8 on enclosed inquiry slip ▲

benchmaster Koil Kradles

Now Bigger Than Ever... Better Than Ever!

Solves the problem of supplying coil stock to automatically fed machines!

KOIL KRADLES can be used with *any* automatically fed machine using coil stock! Supplies a steady slack loop from which any machine can freely draw. Increases feed speeds and accuracy, eliminates drag against heavy coils, eliminates heavy lifting and loading problems!

EXCLUSIVE VARI-LOOP CONTROL—Gives 1 to 10 seconds motor drive actuation *after loop control shuts off!* Successfully smooths out flow of material, reduces motor starts and stops, cuts unnecessary wear.

IMPROVED LINKAGE—Sturdier, more versatile. Fully adjustable over 90° arc for "curvature down" or "curvature up" feeding. Instantly removable for easier loading.

MANY EXCLUSIVE FEATURES—All without extra cost. Get full details from Benchmaster!

1835 West Rosecrans Avenue, Gardena, Calif.

benchmaster — World's largest manufacturer of small punch presses and mills.

▲ For more details circle NED-943 E8 on enclosed inquiry slip ▲

Stop Oil Leaks!

Without draining lines or equipment

Users' Reports Tell How OYLTITE-Stik can help you

". . . used for our diesel oil storage tanks." *Railroad*

". . . used as a form of gasket around gear boxes and oil boxes." *Container Mfr.*

". . . sealing ½" and ¾" threaded pipe joints around hydraulic pumps on lifting equipment . . . pressure ranges from 0 to 2500 lbs." *Chemical Company*

". . . for plate cracks and loose seams in fuel oil bunkers of towboats and barges. One such repair has withstood critical vibration in excess of 2 months." *Ship Builder*

". . . on a transformer oil tank." *Furniture Manufacturer*

". . . to stop minor leaks in and about our power houses, particularly with streamline fittings." *Power Company*

OYLTITE-Stik is one of the best time-savers and trouble-stoppers you can find.

• **See your supplier for OYLTITE-Stik, or write direct on company letterhead for free sample.**

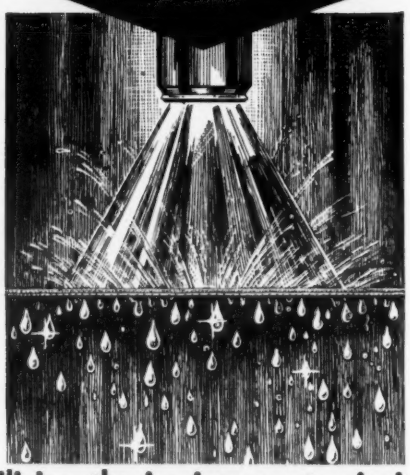
LAKE CHEMICAL CO.
LA-CO BRAND
3053 W. Carroll Ave., Chicago 12, Ill.

▲ For more details circle NED-949 E8 on enclosed inquiry slip ▲

FOR PRECISION PRODUCTION and MICRO-INCH FINISHES...

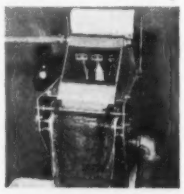
INFILCO INTRODUCES

the IMPINJO filter
(TRADEMARK)



utilizing the impingement principle to FINE CLEAN COOLANTS AND CUTTING OILS

Clean coolants play a vital part in maintaining high quality, close tolerance production and reducing rejects. The new "IMPINJO" Filter removes even microscopic solids. Ferrous or non-ferrous metals and other solids are removed with equally high efficiency. Filter operation is completely automatic. Disposable media carries away dry filtered solids and produces clean coolant for continuous re-use. Savings in coolants, tool and wheel life are important secondary benefits. Capacities available for single machine or central systems.



INFILCO
INCORPORATED
P.O. Box 5033
TUCSON, ARIZONA

Please send BULLETIN 9020 ☐
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____
Ferrous ☐ Non-Ferrous ☐ Coolant ☐ Cutting Oil ☐

INFILCO Incorporated Dept. N Tucson, Ariz.

▲ For more details circle NED-950 E8 on enclosed inquiry slip ▲

New Literature & Catalogs

Materials Handling Equipment

Massey-Harris-Ferguson, Inc., Massey-Ferguson Industrial Div.—Work Bull utility tractors, multipurpose tractor loaders, and fork lift trucks feature quick-change attachments which provide versatility in all types of materials handling operations. Complete specifications and typical operations performed by these engine-powered units are given in 28-page catalog.

▲ For more details circle NED-951 E8 on enclosed inquiry slip ▲

Diamond Wheel Data

Clipper Diamond Tool Co.—Practical information on diamond wheels and grinding techniques is content of 32-page catalog on Clipper diamond wheels. Sectional drawings, dimensions, diamond concentrations, bond characteristics, do's and don't's of diamond wheel use, proper type selections, and wheel markings are some of the aids presented.

▲ For more details circle NED-952 E8 on enclosed inquiry slip ▲

Special Purpose Bearings

Industrial Tectonics, Inc.—24-page illustrated Bulletin AFB-2 discusses design requirements for anti-friction bearings of unusual shapes and sizes. Current information on suitable bearing materials for high temperatures, corrosion resistance, nonmagnetic properties, and other special operating conditions is presented. Bulletin also includes case histories of ball and roller bearings made to customer specifications.

▲ For more details circle NED-953 E8 on enclosed inquiry slip ▲

Waveguide Components & Test Equipment

Microwave Associates, Inc.—More than 300 different types of microwave waveguide components, test equipment, and pressure windows are detailed in 48-page Catalog 58CP. Operating characteristics, performance curves, application data, outline drawings, dimensions, and prices are given for components in the 1.12 to 90 kmc frequency range.

▲ For more details circle NED-954 E8 on enclosed inquiry slip ▲

Plastics Buying Guide

Almac Plastics, Inc.—52-page 1958 plastics catalog and price list is a purchasing guide for plastic sheets, rods, and tubes. Among the materials for which stock sizes and specs are given are Plexiglas, vinyl, acetate, phenolics, polyethylene, polystyrene, Nylon, Kel-F, and Lucite in all commercial forms. Tables list properties, and military and commercial specifications are given.

▲ For more details circle NED-955 E8 on enclosed inquiry slip ▲

Panel Fasteners & Hardware

Simmons Fastener Corp.—Detailed specifications, engineering drawings, applications, and installation information are presented in 40-page Catalog 1257 on industrial, commercial, and military fasteners. Data are given on the new Hinge-Lock and spring-loaded Link-Lock. Also described are Dual-Lock, Quick-Lock, Roto-Lock, Spring Lock, and standard Link-Lock fasteners.

▲ For more details circle NED-956 E8 on enclosed inquiry slip ▲

Guide to Manufacturers' Agents

Names and addresses of more than 10,000 manufacturers who distribute their products through manufacturers' agents are tabulated in 150-page "1958 Manufacturers' Agents' Guide." It includes information on companies' principal products, estimated credit rating, and the name and title of the sales executive. Price is $10. Write to Manufacturers' Agent Publishing Co., 505 Fifth Ave., New York 17, N. Y.

▲ For more details circle NED-957 E8 on enclosed inquiry slip ▲

Bronze Valves

Hammond Brass Works—1958 Catalog No. 158 is descriptive of complete line of bronze valves for industrial, government specification, commercial, domestic, and original equipment application. Separate sections of this 12-page guide are devoted to details of heavy duty valves, heating specialties, and solder-joint valves.

▲ For more details circle NED-958 E8 on enclosed inquiry slip ▲

Ceramics for High Temperatures

Norton Co.—Technical data on Crystolon ceramics for temperatures up to 4000° F are given in Bulletin 686 NP 1. Three types have been developed to meet service conditions too severe for metals to withstand. Corrosion resistance, electrical properties, and resistance to thermal shock and extreme temperatures are tabulated.

▲ For more details circle NED-959 E8 on enclosed inquiry slip ▲

MARTIN-DECKER SENSATER

HOOK SCALE

A VERSATILE HOOK SCALE FOR EVERY INDUSTRY!

- EASY TO READ
- EASY TO HANDLE
- MORE CONVENIENT
- SAFER

CERTIFIED ACCURACY

WRITE FOR DESCRIPTIVE LITERATURE DEPT. S-24

MARTIN-DECKER CORP.
HOME OF THE WEIGHT INDICATOR — LONG BEACH, CALIFORNIA

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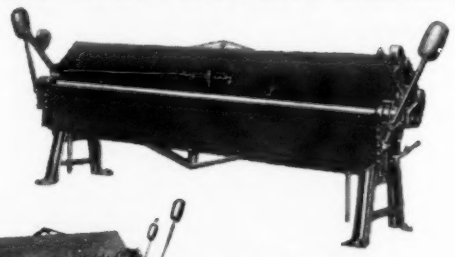
Bending Sheet Metal

single pieces or quantity runs

CHICAGO HAND BENDING BRAKES



Standard
HAND BRAKES
•
Universal
BOX and PAN BRAKES

Both the standard hand brakes and the universal box and pan brakes are available in a wide range of standard sizes. Each features all-steel rugged construction, one-man operation, and quick adjustments.

For Full Details—Ask for Bulletin 55-HB

6781

CHICAGO DREIS & KRUMP
Press Brakes • Straight-Side-Type Presses • Press Brake Dies
Hand and Power Bending Brakes • Special Metal-Forming Machines

DREIS & KRUMP MFG. CO.
7436 South Loomis Boulevard, Chicago 36, Illinois

▲ For more details circle NED-961 E8 on enclosed inquiry slip ▲

COROLINE

A CORROSION-PROOF THERMOSETTING COMPOUND FOR LINING

Chemical Storage Tanks • Processing Tanks
Pickling & Plating Tanks • Pits & Foundations

This new lining material resists the effects of alkalies, acids and solvents. COROLINE can be easily applied with trowel or brush in thicknesses ranging from 1/16" to 3/16". COROLINE can be applied by the customer or by Ceilcote personnel in the field or factory.

Write today for the COROLINE TECHNICAL BULLETIN

COROLINE CEILCOTE

THE CEILCOTE CO., Inc.
4838 Ridge Road • Cleveland 9, Ohio

•Birmingham, Alabama • Buffalo, New York • •Chicago, Illinois • •Cleveland, Ohio • •Detroit, Michigan • Evansville, Indiana • •Houston, Texas • Kansas City, Missouri • Los Angeles, Calif. • • •San Francisco, California • Seattle, Washington • Springfield, Massachusetts •Warehousing

9019-CC

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B&L Measuring Magnifier

FOR QUICK, ACCURATE MEASUREMENTS OF SMALL DIMENSIONS

- **Full 7× Magnification**
- **Flat, Undistorted View**

Easy-to-use Measuring Magnifier is ideal for checking, measuring, inspecting. Measures radii, angles, diameters, decimal inches and decimal millimeters with ease and accuracy. Wide, flat field, free from distortion, with precision 7× lens. Choice of general purpose and 3 separate scales. Protective carrying case fits pocket.

$21.00 includes magnifier, case and 1 scale

BAUSCH & LOMB SINCE 1853

WRITE *for illustrated catalog of full line of B&L magnifiers. Bausch & Lomb Optical Co., 51629 Bausch Street, Rochester 2, N. Y.*

▲ For more details circle **NED-963 E8** on enclosed inquiry slip ▲

EXTERMINATE THE LITTER BUG WITH

BENNETT WASTE RECEPTACLES

Cleanliness is automatic by conveniently placing Bennett Waste Receptacles to invite their use. Yes, "litter bugging" is eliminated with these easy-to-use, sanitary and economical waste receptacles. Put them to work reducing your cleaning costs and increasing neatness.

Wherever people gather there is a logical location of Bennett Waste Receptacles—America's most complete line including self-closing and drop-in models. Write today for catalog and prices.

WRITE FOR FULLY ILLUSTRATED CATALOG

BENNETT SELF-CLOSING WASTE RECEPTACLES available in 12 models

BENNETT MANUFACTURING COMPANY, INC.
ALDEN, N. Y.
Bennett Bilt is Better Bilt

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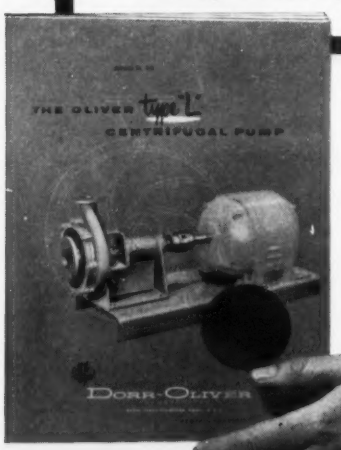
for corrosive transfer service . . . an outstanding alloy metal pump



The positive advantages of this "application engineered" pump . . . a natural for corrosive transfer service are outlined in Bulletin No. 310. You'll want to have this information. Write for a free copy today.

DORR-OLIVER INCORPORATED
WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT
STAMFORD • CONNECTICUT • U.S.A.

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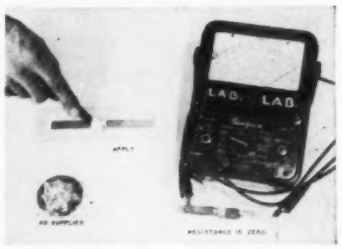
New Processes & Materials

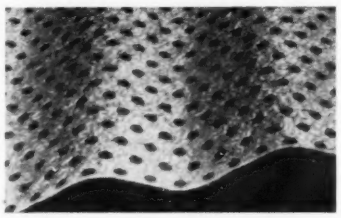
CONDUCTIVE ADHESIVES
conductivity comparable to metal



Epoxide based Eccobond adhesives supplied in paste form can be cured rapidly at moderate temperatures to produce a rigid, highly conductive solid. Adhesion is excellent to metals, plastics, glass, and ceramics, and bond strength is above 2000 psi. Conductivity compares with that of metals. Once cured, adhesives can be used in −65 to 500° F in applications where soldering is impractical. Thermal conductivity is excellent, as well. Adhesives can be thinned out and applied as surface coatings. Eccobond 56 C and 60 L are two-component types, whereas Eccobond 58 C and 60 C are one-component adhesives. Made by **Emerson & Cuming, Inc.**, 869 Washington St., Canton, Mass.

▲ For more details circle **NED-966 E8** on enclosed inquiry slip ▲

DECORATIVE PLASTIC PANEL
reflects 80 per cent of sun's heat



Aluminum foil functions as the heat barrier in Foil-Glass heat-shielding decorative plastic panel. The structural panel reflects better than 80 per cent of sun's heat, yet allows light to pass through in soft, diffused form. It has many possibilities in decorative design for commercial room dividers and partitions, for promotional displays, and other interior design applications, as well as outdoor roofing and shading uses. The embossed Alcoa aluminum foil is laminated between two layers of Fiberglas mat impregnated with polyester resin. Panel is made in 26 and 40-in. wide sheets in lengths of 8, 10, and 12 ft. Available colors are coral, blue, green, and yellow. Made by **Resolite Corp.**, Dept. D-2, Zelienople, Pa.

▲ For more details circle **NED-967 E8** on enclosed inquiry slip ▲

MULTICONDUCTOR CABLE
made of copper ribbon and plastic

Usable in electrical and electronic equipment, Polystrip is a lightweight, flexible, multiconductor, flat cable. Polyester insulation is readily stripped, and cable can be dip soldered. Rated at 85° C continuous, it is available in up to 51-conductor widths. Cable consists of 0.0015-in. thick by 0.03-in. wide flat copper ribbon encased in plastic insulation that is only 0.009-in. thick overall. Each conductor is rated 1 amp in free air at 25° C. Positioning one conductor of the cable to a connector or printed circuit board automatically pre-positions the remaining conductors. Made by **International Resistance Co.**, 409 N. Broad St., Philadelphia 8, Pa.

▲ For more details circle **NED-968 E8** on enclosed inquiry slip ▲

WATERLESS CLEANER
removes oil, grease, and scum

Damp sponge or cloth quickly and easily applies Stratogel waterless cleaner, a concentrated paste-cream capable of removing oil, grease, scum, and other soils. It can be used to clean unpainted and painted aluminum, copper, steel, and other metal surfaces; glass; plastic; Fiberglas; painted and varnished wood; linoleum; tile; porcelain; and leather. Cleaner can also be used with electric floor machines for stripping wax and polish accumulations or on the hands to remove carbon and other soils. Material is offered in 1, 4, and 40-lb containers. Made by **Fine Organics, Inc.**, 211N E. 19th St., New York 3, N. Y.

▲ For more details circle **NED-969 E8** on enclosed inquiry slip ▲

Solve your toughest

HI-TEMP THREAD Problems with C-5

SEND FOR TEST SAMPLE FREE

No More SEIZING or GALLING of STUDS, Even at 1800°F

- ✓ Prevents stud breakage
- ✓ Eliminates pitting of Stainless Steel
- ✓ Reduces Torque
- ✓ Speeds up Disassembly

NOW, being used for boiler, manhole, handhole and face plate studs, turbine header studs, flange bolts on high temperature vulves, steam lines, pumps, etc. 844PRRR

C-5 FEL-PRO "HI-TEMP" ANTI-SEIZE THREAD COMPOUND

Fel-Pro's exclusive C-5 colloidal-copper formula "copper-plates" metal . . . gives maximum cushioning and protection up to 1800°F without breakdown. Prevents galvanic action —eliminates pitting even where dissimilar metals are joined. Protects all threaded surfaces of bolts, plugs and studs, insuring their repeated re-use.

SEND FOR FREE SAMPLE TODAY on your company letterhead.

FELT PRODUCTS MFG. CO.
7468 N. McCormick Blvd., P.O. Box 8609, Chicago 80, Ill.

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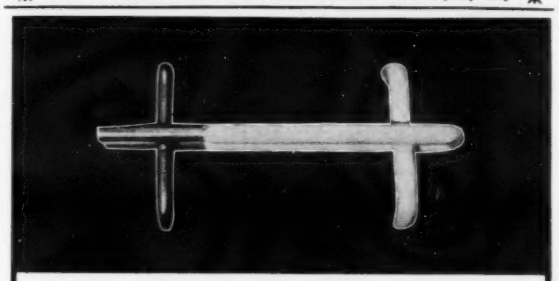

PLATING RACK COATING

Why does Reynosol boast one of the nation's best reputations as a plating rack coating and primer—*in all known plating solutions?*

Because REYNOSOL guarantees easy air release high gloss, and—important to you—*quick fusion.* For REYNOSOL customers, this means high quality . . . *plus* economies that have previously been impossible.

Look at these general specifications—and write today for complete information

COLOR	Unlimited
WEIGHT	Sp. gr. ..... 1.20 or 10 lb. per gal.
TOXICITY	Can be formulated to be non-toxic
AGING PROPERTIES	Good
LIGHT RESISTANCE	Good
TYPE OF SURFACE	Dry and glossy
TENSILE STRENGTH	Very Good
SCUFF RESISTANCE	Very Good
ABRASION RESISTANCE	Very Good
ALKALI RESISTANCE	Very Good
ACID RESISTANCE	Very Good
OIL RESISTANCE	Very Good
HARDNESS	As high as 80 (Shore-A)
% FILM FORMING	100%
VISCOSITY	3,000 to 4,000 cps.
COST PER 0.001" THICKNESS	Ave. $.37 sq. yd.
FIRE HAZARD	None

FREE! SEND FOR YOUR COPY OF NEW REYNOLDS BROCHURE.

REYNOLDS CHEMICAL PRODUCTS CO.
A DIVISION OF STUBNITZ GREENE CORP.
1200 North Main Street Ann Arbor, Michigan

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REDMER Index Chuck with Air Operated Collet

SIMPLIFIED DESIGN SPEEDS UP OPERATION AND REDUCES INDEXING ERRORS

The REDMER AIR INDEX CHUCK speeds up production and eliminates many costly indexing errors in either tool room or production line operation. Indexing positions on outside of chuck simplify changeovers. Lever locks into position after each index. Can be used as holding fixture without indexing for milling, drilling, tapping, etc.
Twelve indexing positions. Collet capacity 1/16" to 2". Complete with standard round Brown & Sharpe type collet, two air hose, Redmer Foot Control and Valve, Filter, Regulator and Lubricator.

Send for complete details, specifications, price list and catalog of all REDMER chucks.

REDMER AIR DEVICES, INC.
Guntersville • Box NED • Alabama

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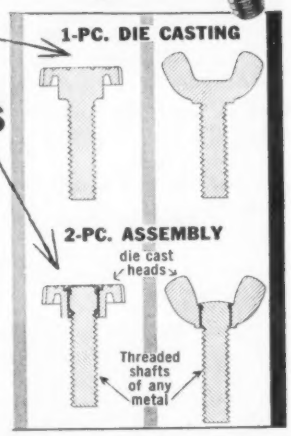
GRC die cast WING & THUMB SCREWS

4 types to meet ALL needs



GRC offers you quality, quantity and economy PLUS your choice of two basic styles—one-piece zinc alloy die cast fasteners or assembled zinc alloy blanks with screw material of steel, brass, aluminum or other metals to order. Wing Screws have special patented recessed fingergrip, generous washer-type shoulder . . . Thumb Screws have exclusive wide top for firm, comfortable grip—plain or shoulder type. All have clean accurate threads . . . rustproof, non-corrosive, bright finish. Select from huge catalog stock of threads, styles and lengths. Another example of GRC's wide variety of fasteners—wing nuts, cap nuts, thumb nuts, rivets, etc.—die cast in quantity for greater economy!

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World's Foremost Producer of Small Die Castings

GRIES

GRIES REPRODUCER CORP.

143 Beechwood Ave., New Rochelle, New York, NEw Rochelle 3-8600

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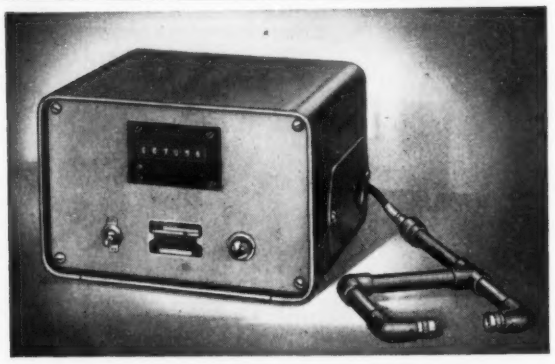

New VEEDER-ROOT Electronic "Count-Pak"

A COMPLETE COUNTING PACKAGE!

High Speed . . . Electric Eye . . . "Pulse Stretcher" . . . Instant Reset

First of a new series of electric and electronic counting "packages" is this Model C "Count-Pak" . . . consisting of the new V-R instant-reset, high-speed (3,000 counts per minute) electric counter combined with a light source and photocell.

Cell and light source can be adapted to any application. Pulses as short as .0002 seconds will actuate this device, which means that a ¼" object or space moving at 6,000 feet per minute will be counted. "Count-Pak" is transistorized throughout (no tubes) and utilizes printed circuits. Rugged; compact case: 8¼" wide; 5¼" high; 6¼" deep. Panel includes pilot light, reset button, and power switch.

Veeder-Root Inc. HARTFORD 2, CONN.

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SAVE TIME with STOCK BROACHES

Minute-Man KEYWAY BROACH KIT

With one of these kits you can cut a keyway in one minute for as little as one cent. For keyways from 1/16" to 1" in any bore from ¼" to 3". Production Type Keyway Broaches also in stock.

SQUARE BROACHES ⅛" to ¾" holes

HEXAGON BROACHES ⅛" to ¾" holes

ROUND BROACHES ¼" to 1" holes

The duMONT CORP., Greenfield, Mass.

MAIL FREE BROACH CATALOG AND PRICE LIST D describing Square Broaches, Hexagon Broaches, Production Type Keyway Broaches and Keyway Broach Kits to

Name.....

Company.....

Address.....

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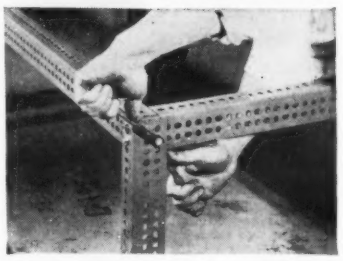
New Processes & Materials

STEEL FRAMING makes racks, buildings, ladders, and other indoor, outdoor products



Each package of Bild - A - Flex steel framing contains 10 lengths in 10 or 12-ft sizes, and 75 sets of matched nuts and bolts. The framing has prepunched slots and is formed with a right angle bend along its length for rigidity. It can be used for assembly of storage racks, permanent scaffolding, ladders, partitions, stock carts, work tables, ramps, enclosures, machine guards, and electrical mountings by cutting to length and bolting together.

Framing can be reused and short and left-over lengths can be joined together or used as braces. It is bonderized to inhibit rust and is finished with gray baked-on enamel for indoor or outdoor use. Available sizes are 2 7/16 x 1⅝ in. and 3⅛ x 1⅝ in. in 0.080 and 0.104-in. steel, respectively. Also offered are 6-in. wide shelf panels in lengths from 36 to 60 in. Made by **Republic Steel Corp.**, Berger Div., Dept. SB, 1000 Belden Ave. N.E., Canton 5, Ohio.

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LIQUID NEOPRENE COATING has corrosion inhibitors added

Long lasting protection against weathering, chemical fumes, salt spray, and corrosion creep can be given metals, concrete, wood, rubber, canvas, and other materials with Charcote CIC-21 liquid neoprene coating. Product has its own "built-in" primer and five corrosion-inhibiting ingredients, one of which is red lead. It adheres tenaciously to steel, bronze, aluminum, stainless steel, and galvanized iron. Charcote CIC-21 is made only in red and can be brushed, rolled, sprayed, or dip-applied. It is offered in quart, gallon, 5-gal, and drum containers. Made by **Charleston Rubber Co.**, 154 Stark Industrial Park, Charleston, S. C.

▲ For more details circle NED-977 E8 on enclosed inquiry slip ▲

Servo Breadboard Equipment

Sterling Precision Corp., Instrument Div.—Complete line of cams, gears, bearing and component hangers, limit stops, couplings, and other servo breadboard equipment is listed in 12-page catalog.

▲ For more details circle NED-978 E8 on enclosed inquiry slip ▲

NEW HIGH SPEED ADJUSTABLE CLOSURES, IN A WIDE VARIETY OF SIZES AND SHAPES, CUT PRODUCTION TIME AND COSTS!

Snap-Tite® or Turn-Tite®

Cam or Lever Action Test Plugs and Seals designed for high production use!

Snap-Tite types for use during processing of machine parts, tubes, molds, castings, tanks and for testing low pressure applications. *Turn-Tite* types for higher pressure applications. Also where restricted clearance prohibits cam action closure. Also types to accommodate pressure line connector. Snap-Tite and Turn-Tite also used as permanent parts of finished products.

Write for catalog

Direct Inquiries to Dept. 31

MOELLER Mfg. Co., Inc.
Industrial Division
2401 DURAND AVE.
RACINE, WIS.

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Permanently End Condensation Drip, Rust and Corrosion with NoDrip Plastic Coating!

Here is the inexpensive, easy way to solve your condensation problem once and for all. NoDrip plastic coating acts immediately to insulate and protect tanks, pipes, walls, ceilings, air ducts and other metal equipment against condensation drip, rust and corrosion. NoDrip can be applied by anyone without special experience with brush, trowel or spray. NoDrip is also resistant to acid, alkali and brine . . . protects concrete, brick, plaster, tile, wood or composition surfaces.

FREE

32-PAGE NoDrip DATA HANDBOOK

Complete with photographs, charts and technical information to help solve your condensation problem. Write today!

Available at leading plumbing and mill supply houses

J. W. MORTELL COMPANY 526 Burch St., Kankakee, Ill.

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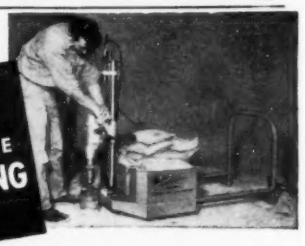
NEW! Cyclo-Core® PORTABLE MASONRY DRILLING MACHINE



for use with

Cyclo-Core Multi-Carbide-Tipped Rotary Bits

NO WATER REQUIRED!

LOWEST POSSIBLE COST PER HOLE USING CYCLO-CORE BITS!

This rig practically eliminates set-up and knock-down time and greatly reduces drilling time! Manual or hydraulic operation. Puts up to 1000 lbs. pressure on cutting edges of bit . . . ample for most jobs. Gives 26" drill stroke. Easily portable, easily handled. Cuts drilling costs to a new low!

Get the extra efficiency and economy that today's leading portable masonry drilling rig provides. Write for full details now!

Makes Drilling Close to Walls or in Corners a Snap!

Drills up to 6" diameter holes in Concrete with or without Rods

New England Carbide Tool Co., Inc.

55V Commercial St. • Medford 55, Mass.

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of smooth, tough DuPont NYLON

Better bearings that COST less to BUY* ...less to INSTALL ELIMINATE LUBRICATION!

Additional Benefits:

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- LONGER LIFE
- EASILY INSTALLED
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- REDUCED WEAR

NYLINER Bearings are a highly engineered thin liner of DuPont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use. The compensation gap principle assures maintenance of diametral tolerances for precision applications.

Seven Standard Types available from stock. Write for literature and name of your local representative who stocks NYLINER Bearings for immediate shipment.

*In production quantities at new, REDUCED PRICES.

THOMSON INDUSTRIES, Inc.

DEPT. 9, MANHASSET, NEW YORK

Also— Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions and AC CASE . . . Hardened & Ground Steel Shafting . . .

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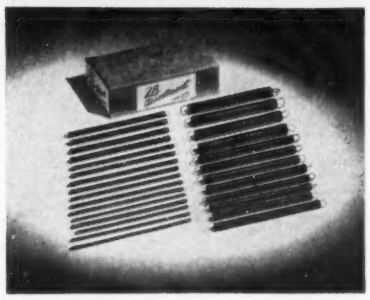
Stock SPRING assortments



Our #28 (extension) Spring Assortment folders are now available and yours for the asking. Our #31 (compression) Spring Assortment folders are also available. Ideal for tool rooms and maintenance work.

To overcome the faults of ordinary assortments, which seem to contain "every spring except the one needed", design efforts were not confined to the springs alone; rather, loadings and dimensions were analyzed to assure the user of greater probability in having the correct spring on hand, whatever the application.

Find Your Nearest Agent In The Yellow Pages

We also manufacture to special order.

Send samples or prints for quotation.

PARAGON SPRING COMPANY
4619 W. Fulton St. • Chicago 44, Ill.

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NEW AIR TOOL SUSPENSION HOSE REELS

- . . . combine tool suspension and air supply
- . . . simplify installation
- . . . keep tools always within reach
- . . . save time on high speed production assemblies

These new air tool suspension hose reels save duplication of equipment and maintenance. Spring tension of the reel counterbalances weight of pneumatic drills, screwdrivers, and other air tools. Adjust tension by adding or removing coils of hose. Powerful spring motor takes up tool automatically.

Schrader Number	Hose I.D.	Hose Length	Supports Air Tool
3481	¼"	15 feet	to 5 lbs.
3481A	⅜"	10 feet	to 5 lbs.
3485	¼"	15 feet	5 to 10 lbs.
3485A	⅜"	10 feet	5 to 10 lbs.

Complete details about these hose reels, and Schrader's hundreds of other air products, are available in informative literature. Direct all your questions about air control to Schrader.

Schrader®

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
459 Vanderbilt Avenue, Brooklyn 38, N. Y.

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Hi-Lo Load-O-Matic Control Eliminates Pulley Slow Down

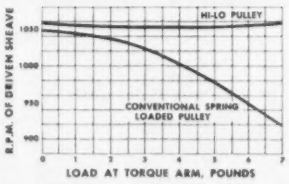
Hi-Lo Variable Speed Pulleys positively maintain the desired speed ratio over a wide range of load variation by means of an exclusive cam and cam follower assembly. This means: Pulley speed is independent of load and load changes. "Drag" is eliminated and high shock absorbency provided.

Pulleys do not compress belt due to spring pressure. Springs are not driving members. They act only to keep pulley faces in contact with belt.

Pulleys automatically regulate belt tension. Because of the cam assembly, belt is never under more tension than required by the load. Double cams maintain constant belt alignment.

Request details and prices. Ask for Bulletin A-458

HI-LO PULLEYS COMPARED TO OTHER VARIABLE SPEED PULLEYS



Available in sizes from .5 to 5 hp., ratios to 2.5/1 (single pulley) 6.25/1 (double pulley).

Manufactured By
HI-LO MANUFACTURING COMPANY

Nationally Distributed By
LOVEJOY FLEXIBLE COUPLING COMPANY
311 N. Lavergne Ave., Chicago 44, Ill.

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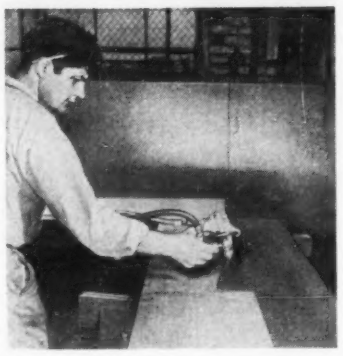
New Processes & Materials

LAMINATING ADHESIVE
bonds to plastic, metal, and wood



High strength bonds between a variety of laminating materials are afforded by EC-1368 elastomeric base adhesive. It can be used with plastic, steel, aluminum, wood, and other laminating materials as well as for sandwich structures. It has good water resistance, and retains strength and adhesion at temperatures over 200° F. Shear strengths range to 500 psi. Adhesive is applied by brush, spray, or roller. Strong contact adhesion is assured after allowing both coated surfaces of materials to be joined to dry for 15 min. Made by **Minnesota Mining & Mfg. Co.**, Adhesives, Coatings & Sealers Div., Dept. NED, 423 Piquette Ave., Detroit 2, Mich.

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PREPLATED STEEL
in chrome, nickel, or copper

Available in preplated finishes of chrome, nickel, and copper on a steel base, Nickeloid C-grade is adaptable for use as trim and functional parts. It requires no cleaning or polishing, and can be stamped, punched, bent, welded, seamed, or otherwise fabricated by conventional methods without damage to the preplated finish. It is also offered with Mar-Not protective coating which can be peeled or stripped off after fabrication. It is available in 24 x 96 in. and up to 160-in. sheets; ⅛ to 24-in. wide coils; and ¼-in. or wider strips up to 96 in. long. Gages are 0.008 to 0.036 in. with No. 4 temper. Made by **American Nickeloid Co.**, Dept. E, Peru, Ill.

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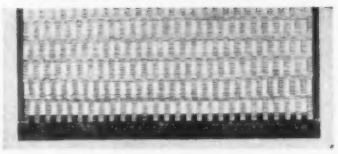
NONSKID MAT
oil and greaseproof custom type



Safe, nonskid footing for industrial floors is provided by this oil and greaseproof, multilink mat. It is custom-made with links strung on parallel, nonrusting, spring steel rods. Links, nosing, and edging are made of the same brown material. Made by **B. F. Goodrich Industrial Products Co.**, Dept. E, 500 S. Main St., Akron 18, Ohio.

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NEW STEAM TRAP GUIDE...

It's yours now—a new, complete and concise 40-page guide giving condensed information on selecting and sizing steam traps for more than 100 types of steam-operated equipment. In addition, brief descriptions, applications, specifications and prices on inverted bucket, thermostatic, combination, float, moisture and high pressure steam traps enable you to make your trap selection properly, quickly and easily.

FASTEST WAY TO SIZE STEAM TRAPS

- Formulas
- Engineering Data
- Applications
- General Principles
- Steam Trap Problems

FREE "How To Select Steam Traps and other Fluid Specialties"—request from The V. D. Anderson Company, division of International Basic Economy Corporation, 1945 West 96th Street, Cleveland 2, Ohio.

THE V. D. ANDERSON CO.
division of International Basic Economy Corporation
1958 West 96th Street • Cleveland 2, Ohio

Super-Silvertops

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FREE BULLETIN TELLS

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***Illustrated* McCASKEY FOLDER SHOWS HOW TOOL CRIB CONTROL WORKS TO—**

1. Record all tools and gauges, preventing loss.
2. Recover idle tools.
3. Cut crib inventories.
4. Reduce tool breakage.
5. Locate each tool, loaned or in crib.
6. Eliminate delays, save time.

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McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • INVENTORY • TOOLS • MAINTENANCE • COSTS

Victor Adding Machine Co.
McCASKEY INDUSTRIAL DIVISION
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Manufacturers of Business Machines, Cash Registers, Business and Industrial Systems, Electronic Equipment, Electri-Cars

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Workers willingly wear *comfortable* knit-cotton lined PIONEER Liquidproof Gloves All Day.

NL-34 NL-42 NL-52 VL-34 NS-35*

Pioneer Knit-Cotton Lined Gloves with Non-Slip Grip

Style	Material	Weight	Color	Lining	Length
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Stanzoil NL-42	Neoprene	Heavy	Blue/Black	Knit Cotton	12"
Stanzoil NL-52	Neoprene	Heavy	Blue/Black	Knit Cotton	14"
Stanflex VL-34	Pylox	Medium	Red	Knit Cotton	10½"
Stanzoil NS-35	Neoprene	Light	Red	Cotton Flock*	10½"

Write for our Industrial Glove Line Catalog and price list and the name of your nearest Pioneer Distributor. If you have a hand protection problem send a description to our "Hand Protection Clinic" for our glove recommendation.

the PIONEER Rubber Company
234 Tiffin Road, Willard, Ohio

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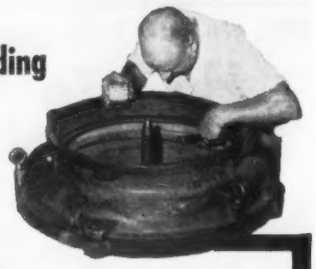
For machinery repairs or rebuilding

Plastic Steel®

80% STEEL



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Proven in use by leading manufacturers, PLASTIC STEEL can cut costs, speed production in **your** plant. 1001 uses in industry. FREE catalog on request — write for your copy today.

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DEVCON CORPORATION

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for every product every industry every printing unit

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Each ink inquiry is handled by an experienced marking engineer, whose goal is to give you the best mark for the least cost.

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Tell us your marking speed, type of printing unit, type of surface being marked and drying time desired. Also include a sample of the material. Our ink specialists will analyze your requirements and send you a sample of Matthews Ink best suited for your operation.

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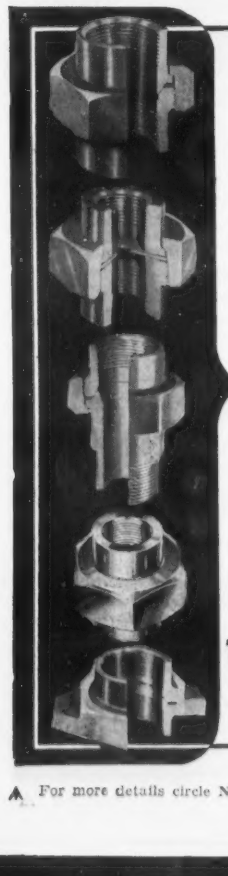

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for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

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250 Mill St. • CATAWISSA, PA.

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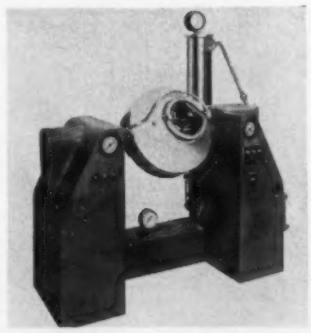
VACUUM DRIER-BLENDER for heat-sensitive materials



Rapid, in-motion drying results from balance of jacket circulation, vapor line and filter, compact piping, condenser, vacuum line and pump, and controls built into this vacuum tumble drier-blender. Designed for heat-sensitive materials, the equipment has baffling which uniformly distributes the heating medium in the jacket. Rapidly generated vapors in the vessel have a scrubbing action on all surfaces. Fourteen models range in capacity from 1 to 150 cu ft. Charge openings are 8 to 18 in., and swing radii are from 10⅜ to 62 in. Made by **Patterson-Kelley Co.**, 392 Warren St., East Stroudsburg, Pa.

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The new Stearns Indox Grate Magnet actually presents *4 times more collection surface* to remove tramp iron from free-flowing materials. Here's the secret: the magnetic collecting tubes have *continuous poles* along their entire length — no dead spots where iron particles can slip past (see comparative photos, below right).

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Ordinary Grate Magnet — Indox Grate Magnet

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A DIVISION OF THE INDIANA STEEL PRODUCTS COMPANY
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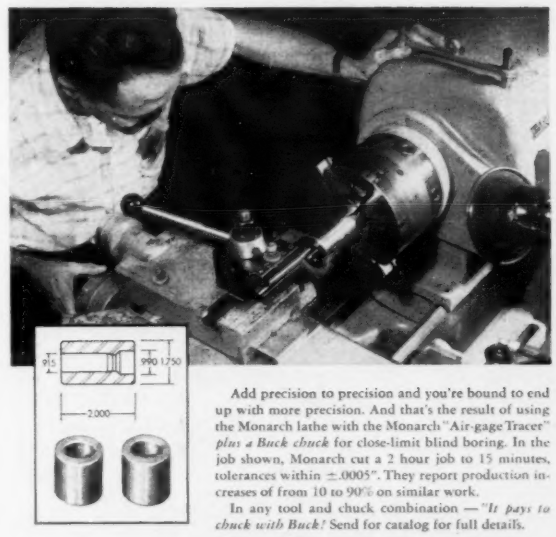
MONARCH LATHE with *Buck* AJUST-TRU® CHUCK "Cuts blind boring time 10% to 90%"



Add precision to precision and you're bound to end up with more precision. And that's the result of using the Monarch lathe with the Monarch "Air-gage Tracer" *plus a Buck chuck* for close-limit blind boring. In the job shown, Monarch cut a 2 hour job to 15 minutes, tolerances within ±.0005". They report production increases of from 10 to 90% on similar work.

In any tool and chuck combination — *"It pays to chuck with Buck!* Send for catalog for full details.

BUCK TOOL COMPANY
522 SCHIPPERS LANE • KALAMAZOO, MICH.

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Remember the costly plumbing bill

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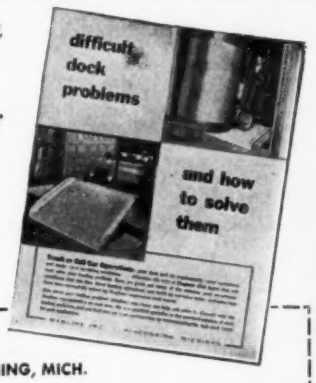
shows how to solve them!



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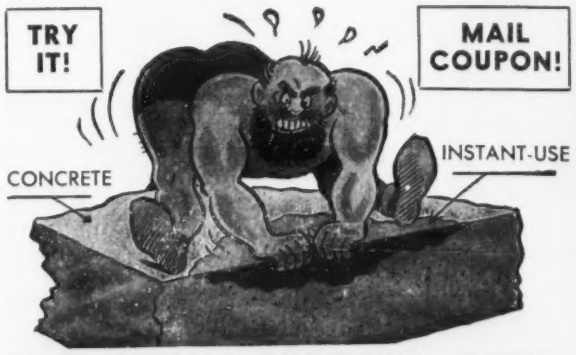

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